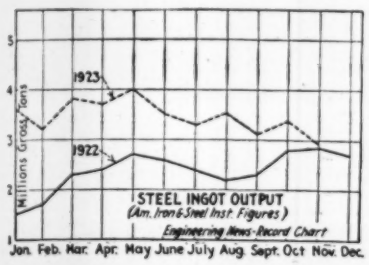
CONSTRUCTION NEWS

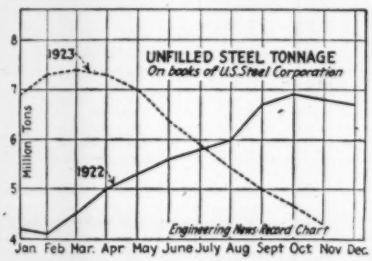
Engineering News-Record, December 27, 1923

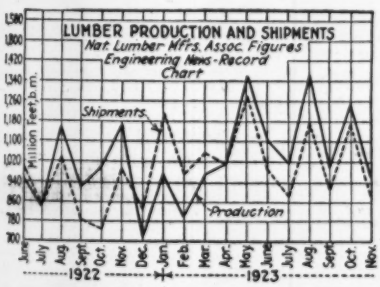
The Construction Barometer

Slower Pace in Industrial Activity—Production Conditions Exactly Opposite One Year Ago

THE reported slower pace in industrial activity is confirmed by the charted trends in iron, steel, lumber and cement production, as shown below. Pig-iron, steel ingot and lumber output declined considerably during November of this year, against an exactly opposite condition existing in November, 1922. From March to October, 1922, the unfilled steel tonnage steadily rose; during the same period this year it gradually dropped. Although unfilled tonnage declined during the last quarter of 1922, the drop from October to November of this year was unusually abrupt. Cement output, though lessened, conforms closely to the regular seasonal trend. November debits to individual accounts (Federal Reserve) showed only a slight drop from the preceding month, against a sharper decline last year. Payments of debts are normally heavier in the last three months of the year than during the preceding quarter.


STEEL INGOT OUTPUT
(Am. Iron & Steel Inst. Figures)
Engineering News-Record Chart
Millions Gross Tons
1923
1922
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.


UNFILLED STEEL TONNAGE
On books of U.S. Steel Corporation
Engineering News-Record Chart
Million Tons
1923
1922
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.


LUMBER PRODUCTION AND SHIPMENTS
Nat. Lumber Mfrs. Assoc. Figures
Engineering News-Record Chart
Million Feet b.m.
Shipments
Production
June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov.
1922
1923

Engineering News-Record Statistics

VALUE OF LARGE CONTRACTS LET IN THE UNITED STATES

Week Ended	Public Work	Private Work	Total Contracts
Dec. 6	$9,806,000	$20,846,000	$30,652,000
Dec. 13	10,775,000	16,335,000	27,110,000
Dec. 20	22,207,000	20,068,000	42,275,000
3 weeks	$42,788,000	$57,249,000	$100,037,000

LARGE BUILDING CONTRACTS—NUMBER AND VALUE

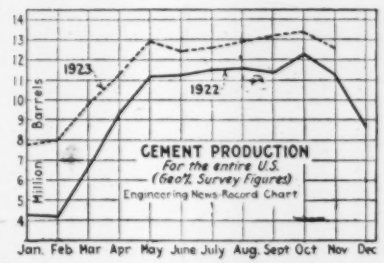
Week Ended	Public No.	Public Work	Private No.	Private Work
Dec. 6	20	$5,034,000	49	$14,770,000
Dec. 13	16	3,567,000	28	9,576,000
Dec. 20	17	7,988,000	28	16,008,000
3 Weeks	53	$16,589,000	105	$40,354,000

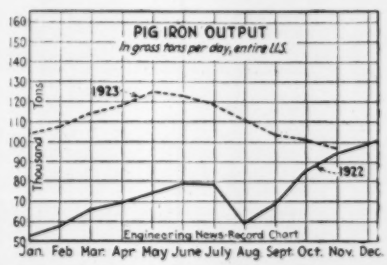
NUMBER OF LARGE JOBS NOW OUT FOR BIDS

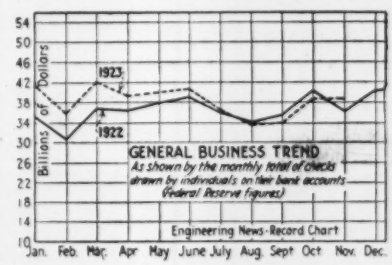
Week Ended	Private	Public All	Streets and Roads	Water-works and Sewers	All Building
Dec. 6	40	183	58	27	61
Dec. 13	38	177	50	33	56
Dec. 20	29	137	30	22	40

LUMBER LOWER—OTHER BASIC PRICES FIRM

	Quoted on Dec. 27, at	Price was	On
Structurals, Pittsburgh, 100 lb.	$2.50	@2.60	June 21
Cement, Chi., net bbl.	2.10	2.20	Nov. 22
Pine, N. Y., M.ft.	58.00	59.00	Dec. 20
Fir, San Fran., M.ft.	38.00	41.00	Dec. 13
Common labor, hr.	.54	.53	June 28




PIG IRON OUTPUT
In gross tons per day, entire U.S.
Engineering News-Record Chart
Thousand Tons
1923
1922
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.


GENERAL BUSINESS TREND
As shown by the monthly total of checks drawn by individuals on their bank accounts
(Federal Reserve figures)
Engineering News-Record Chart
Billions of Dollars
1923
1922
Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.

PROPOSALS

For proposals Advertised see the pages immediately following the "Construction News" Section.

WATERWORKS

Bids Close		See Eng. News-Record
Jan. 3	Erie, Pa.	Dec. 6
Jan. 3	Sacramento, Calif.	Dec. 27
Jan. 7	Ames, Ia.	Dec. 20
Jan. 8	Burbank, Calif.	Dec. 27
Jan. 10	Belzoni, Miss.	Dec. 20
Jan. 10	St. James, Mo.	Dec. 20
Jan. 14	North East, Pa. Adv. Dec. 27.	Dec. 27
Jan. 15	Oklahoma City, Okla. Adv. Dec. 20 and 27.	Dec. 20
Jan. 16	South Bend, Ind.	Dec. 20
Jan. 19	Charlottesville, Va. Adv. Dec. 27.	Dec. 27

SEWERS

Dec. 31	Granite City, Ill.	Dec. 27
Jan. 2	Long Branch, N. J.	Dec. 20
Jan. 2	Johnson City, N. Y.	Rec. 27
Jan. 3	Carrollton, Mo.	Dec. 27
Jan. 3	McKenzie, Tenn. Adv. Dec. 27.	Dec. 27

BRIDGES

Jan. 3	Robert Lee, Tex.	Dec. 27
Jan. 3	New Smyrna, Fla.	Dec. 27
Jan. 11	Seattle, Wash.	Dec. 20
	Adv. Dec. 20 and 27.	
Jan. 22	St. Louis, Mo.	Dec. 27
May 1	Tientsen, North China	Oct. 11

DAMS

Jan. 7	Los Angeles, Calif.	Nov. 29
Feb. 7	Kingston, N. C.	Dec. 27

RAILWAYS

Mar. 18	New Zealand	Sept. 20

EXCAVATION, DRAINAGE IRRIGATION

Dec. 28	New York, N. Y.	Dec. 20
Dec. 29	Brooklyn, N. Y.	Dec. 20
Jan. 3	Senatobia, Miss.	Dec. 27
Jan. 17	Rochester, N. Y.	Dec. 20
	Adv. Dec. 20 and 27.	
Jan. 18	Lake Charles, La. Adv. Dec. 27.	Dec. 27

Bids Close			See Eng. News-Record

STREETS AND ROADS

Jan.	2	Indiana	Dec. 20
Jan.	2	Nevada	Dec. 20
Jan.	2	Richmond Heights (St. Louis P. O.), Mo.	Dec. 27
Jan.	3	Albany, Ga.	Dec. 27
Jan.	3	Robert Lee, Tex.	Dec. 27
Jan.	3	Louisiana	Dec. 20
Jan.	3	North Kansas City, Mo. Adv. Dec. 20 and 27.	Dec. 20
Jan.	3	Buffalo, N. Y.	Dec. 27
Jan.	4	Alabama	Dec. 13
Jan.	7	Vicksburg, Miss.	Dec. 13
Jan.	7	California	Dec. 20
Jan.	7	Stockton, Calif.	Dec. 27
Jan.	7	California	Dec. 27
Jan.	7	Oroville, Calif.	Dec. 27
Jan.	8	Monticello, Ind.	Dec. 20
Jan.	9	Del Rio, Tex.	Dec. 27
Jan.	10	San Angelo, Tex.	Dec. 20
Jan.	11	Seattle, Wash.	Dec. 27
Jan.	11	Franklin, Tex.	Dec. 27
Jan.	14	Oilton, Okla.	Dec. 13
Jan.	15	Michigan	Dec. 6
Jan.	15	Michigan	Dec. 13
Jan.	15	Rock Springs, Tex.	Dec. 27
Jan.	15	Louisiana	Dec. 27
Jan.	22	St. Louis, Mo.	Dec. 27

INDUSTRIAL WORK

Jan.	8	Canton, N. Y.	Dec. 27
Feb.	1	Peoria, Ill.	Dec. 27
Apr.	30	Wellington, New Zealand	Dec. 6

BUILDINGS

Dec.	31	Bryn Mawr, Pa.	Dec. 13
Dec.	31	Phila., Pa.	Dec. 13
Jan.	1	Williamson, W. Va.	Nov. 22
Jan.	1	Ft. Worth, Tex.	Dec. 20
Jan.	1	Wilkes Barre, Pa.	Dec. 20
Jan.	2	Bloomington, Ind.	Nov. 15
Jan.	3	New York, N. Y.	Dec. 20
Jan.	3	Tucson, Ariz.	Dec. 20
Jan.	3	Baltimore, Md.	Dec. 20
Jan.	3	Texarkana, Tex.	Dec. 20
Jan.	3	Columbia, Mo.	Dec. 13
Jan.	8	Wilson, N. C.	Dec. 20
Jan.	8	Brooklyn, N. Y.	Dec. 27
Jan.	8	New York, N. Y.	Dec. 27
Jan.	8	Bellaire (Jamaica P. O.), N. Y.	Dec. 27
Jan.	9	Baltimore, Md.	Dec. 27
Jan.	9	Denver, Colo.	Dec. 13
Jan.	10	Birmingham, Ala.	Dec. 13
Jan.	12	Boston, Mass.	Nov. 29
Jan.	14	Galveston, Tex.	Nov. 29
Jan.	14	Schuylerville, N. Y.	Dec. 13
Jan.	14	Galveston, Tex.	Dec. 27
Feb.	1	Dorchester, Mass.	Nov. 29
Feb.	4	Urbana, Ill. Adv. Dec. 13 to 27.	Dec. 13
Feb.	4	Columbus, O.	Dec. 27

FEDERAL GOVERNMENT WORK

Dec.	29	Metal Work—Louisville, Ky. Adv. Dec. 6 to 27.	Dec. 6
Jan.	2	Post Office—Liberty, Mo.	Dec. 6
Jan.	2	Extension to Building—Keyport, Wash.	Dec. 20
Jan.	3	Gates—Washington	Dec. 6
Jan.	3	Lock Gates—Addison, Ky. Adv. Dec. 6 to 27.	Dec. 6
Jan.	3	Post Office and Custom House—Mineral Point, Wis.	Dec. 13
Jan.	9	Scow—Phila., Pa.	Dec. 20
Jan.	9	Storage and Recreation—Cape Hatteras, N. C.	Dec. 20
Jan.	9	Quarters and Boathouse—Poyners Hill, N. C.	Dec. 20
Jan.	9	Underpinning Foundations—Wash., D. C.	Dec. 20
Jan.	9	Remodeling—Norfolk, Va.	Dec. 27
Jan.	10	Steel Hulls — Vicksburg, Miss.	Dec. 6
Jan.	15	Filtration Plant, etc.—Wash., D. C. Adv. Dec. 20 and 27.	Dec. 20
Jan.	16	Scow and Barge—Milwaukee, Wis. Adv. Dec. 20 and 27.	Dec. 20
Jan.	16	Fuel Oil Storage—Mare Island, Calif.	Dec. 6
Jan.	19	Gates—Cincinnati, O. Adv. Dec. 27.	Dec. 27
Jan.	21	Post Office—State College, Pa. Adv. Dec. 27.	Dec. 27
Jan.	30	Ward—Great Lakes, Ill.	Nov. 15
Feb.	6	Storehouse—Pearl Harbor, H. T.	Dec. 20

UNCLASSIFIED

Dec.	28	Bulkhead—Long Island City, N. Y.	Dec. 20
Dec.	28	Heating and Ventilating Apparatus—Brooklyn, N. Y.	Dec. 20

Bids Close			See Eng. News-Record
Jan.	3	Aluminum Steel Cored Cable, etc.—Melbourne, Australia	Nov. 1
Jan.	3	Ferry Boats—New Orleans, La.	Dec. 13
Jan.	7	Swimming Pool — Taylor, Tex.	Dec. 20
Jan.	9	Transmission Towers — San Francisco, Calif.	Dec. 20
Jan.	9	Wharf—Pembroke, Ont.	Dec. 27
Jan.	19	Transformers, etc.—Melbourne, Australia	Oct. 18
Mar.	31	Hopper Dredge — Brisbane, Queensland, Australia	Nov. 1
Apr.	30	Headworks—Wellington, New Zealand	Dec. 13

MATERIALS AND EQUIPMENT

Dec.	31	Tractor, etc.—Pass Christian, Miss.	Dec. 27
Dec.	31	Pipe, etc.—Phila., Pa.	Dec. 27
Jan.	2	Gravel—Abbeville, La.	Dec. 27
Jan.	3	Cement—Wisconsin	Dec. 27
Jan.	7	Crushed Stone, etc.—Houston, Tex.	Dec. 27
Jan.	9	San Francisco, Calif.	Dec. 20

Where name of official is not given inquiries should be addressed to City Clerk, County Clerk or corresponding official.

Waterworks

PROPOSED WORK

N. Y., Clinton—Plans 20 m.g. reservoir at White Creek. $106,775. W. G. Stone, Whitesboro, engr.

N. Y., Herkimer—Takes bids within week pumping equipment and motors for new well and water supply. $10,000. Engineer's name withheld. Address Municipal Comn. Noted Nov. 22.

W. Va., Martinsburg—Water Comn. plans additional reservoir. $30,000.

Fla., Cocoa — Plans waterworks system. $95,000. J. E. Craig, 427 King St., Jacksonville, engr.

Fla., Longwood — Had plans prepared waterworks system. $20,000. J. E. Craig, 427 King St., Jacksonville, engr.

Fla., St. Augustine—Making plans for obtaining supply of soft water, improving distribution system, and new pumping engines, etc. $300,000-$400,000. Bond election soon. J. E. Craig, 427 King St., Jacksonville, engr.

Fla., Sanford—Had plans prepared waterworks system, incl. 31 mi. mains, two-three m.g. pumping engines, soft water collecting system, $375,000; will vote on $845,000 bonds Jan. 11, for waterworks, electric and gas plants. J. E. Craig, 427 King St., Jacksonville, engr.

O., Cincinnati—Plans reservoir 400 ft. square, 30 ft. deep, 30 m.g. capacity, on Winton and North Bend Rds. $110,000. J. A. Hiller, City Hall, engr.

O., Youngstown — Mahoning Water Co. plans new mains and dams creating lakes for reserve supply. $200,000. W. F. Hopkins, supt.

Mich., Otsego—See "Streets and Roads."

Ill., Addison—Will probably take bids about Mar. 1, 4- to 10-in. mains. $25,000. E. Hancock, 2047 Ogden Ave., Chicago, engr.

Ill., Lebanon — Plans water supply and distribution system. Address W. C. Lang.

Kan., Russell—Voted $95,000 bonds for waterworks system. J. W. Murphy, city clk.

Mo., Miller—Alexander Bros., engrs., 535 West Commercial St., Springfield, takes bids about Jan. 1, improving waterworks here, for city. $16,250. Noted Sept. 13.

Mo., Thayer—Jan. 8, to vote on $55,000 bonds waterworks and distribution system. Alexander Eng. Co., Springfield, engrs. Noted Oct. 18.

Tex., Austin—Voted $300,000 bonds rapid sand filtration plant. J. B. Hawley, Cotton Exch. Bldg., Ft. Worth, consult. engr.

Tex., Mart—Jan. 15, to vote on $150,000 bonds water works system. Koch & Fowler, Central Bank Bldg., Dallas, engrs. Noted Aug. 23.

Okla., Chickasha — Election Dec. 28, to vote on $60,000 bonds for 10,000 ft. of 16 in. c.i. pipe line and motor driven pumping units. J. C. Milliken, Chickasha, engr.

Wash., Anacortes—Having surveys and estimates made for waterworks extensions, making Lake Campbell source of water supply for city. $100,000. A. Short, city engr.

Calif., Coronado (San Diego P. O.)—Coronado Water Co., Union Bldg., San Diego, plans to extend water system to outlying districts, will install electrically driven pumps for 7 wells. Project includes storage dam 55 ft. high, 650 ft. long on top. $100,000 or more. A. Ervast, Union Bldg., San Diego, engr.

BIDS DESIRED

Pa., North East—Jan. 14, by Boro. Council, 600,000 gal. per day filtration plant; adv. E. N.-R. Dec. 27.

Va., Charlottesville — Jan. 19, by B. A. Bennett, city mgr., 12 mi. 18 in. c.i. pipe line, tunnel, diversion dam, etc. Fuller & McClintock, 170 Bway., New York City, and L. H. Williamson, Natl. Bank Bldg., Charlottesville, engrs.; adv. E. N.-R. Dec. 27.

Ia., Dubuque—Taking bids 20 and 24 in. Class D and 8 and 12 in. Class B c.i. pipe and valves. $5,000. Mead & Seastone, Journal Bldg., Madison, Wis., engrs.

Tex., Hillsboro — Taking bids two 750 g.p.m. motor driven centrifugal pumps for fire use, 241 ft. head, 2 deep well pumps, 80 g.p.m., 250 ft. lift, 1 well pump 400 ft. lift, 60 g.p.m. T. A. Bullock, city engr.

Calif., Sacramento—Jan. 3, by H. G. Denton, clk., 57,000 ft. 6 in. c.i. mains.

BIDS RECEIVED

R. I., Providence — Water Supply Bd., City Hall, Dec. 19, clearing, grubbing, earth and rock excav. in preparation for Scituate Reservoir, in Scituate, from W. D. Winchell, 315 Stillman Bldg., Columbus, O., $251,265. Noted Nov. 22.

N. Y., New York — N. J. Hayes, comr. Water Supply, Gas & Electricity, Municipal Bldg., mains in Oak Point and Viele Aves., etc., from Beaver Eng. & Contg. Co., 51 Chambers St., $9,993; Brinsmade and Calhoun Aves., etc., from C. De Blasio, 339 7th Ave., Mt. Vernon, $10,600. Noted Dec. 13.

Calif., Montecito — Montecito County Water Dist., Dec. 11, ditching, backfilling and laying water pipe for waterworks system, from J. Currie, 3120 Balboa St., San Francisco, $94,143.

CONTRACTS AWARDED

Md., Baltimore—Bd. Awards, piping for pumping station, for Fire Dept., Lexington and Gay Sts., to H. A. Kries, 6 West Lombard St., $4,418. Noted Dec. 6.

O., Youngstown—Mahoning Water Co., 1 m.g. filtration plant at Burgess Lake, to Burnip Constr. Co., 223 East Broad St., Columbus, $100,000.

Ia., Grinnell—New well to C. B. Brant, Indianapolis, Ind., $23,850.

Ill., Forest Park—Artesian wells to S. B. Geiger, Old Colony Bldg., Chicago, $22,000.

Mich., Menominee—H. W. Blunder, city clk., installing one 2,500 gal. centrifugal pump, two 1,000 gal. centrifugal pumps, one 60 cycle generator, etc., to Commonwealth Electric Co., 417 Bway., St. Paul, Minn., $20,150. Noted Dec. 6.

Ont., Fort Erie—Constructing pumping station to F. F. Fry & Co., Ltd., 43 Scott St., Toronto, $18,596.

Sewers

PROPOSED WORK

Conn., Hartford—Street Dept. plans 2,000 ft. 10- to 20-in. vitr. clay sewers in Norwich and Wyllys Sts. $28,000. R. N. Clark, city engr.

Conn., West Hartford (Branch of Hartford)—Plans trunk line sewer, probably segmental block or concrete, Steele Rd. $45,000. G. H. Barton, chn. Bd. Sewer & Water Dept.

N. Y., Ilion—Plans disposal plant. $50,000-$60,000. Engineers name withheld.

N. Y., Rochester—Plans sewers in Longacre and Falleson Rds., Clinton and Edgemont Aves., Harding and Nye Sts. $34,200. Will mature in spring. C. A. Poole, City Bldg., engr.

N. C., Sanford—Making plans and soon takes bids 2 mi. extension to sewer system. $30,000. W. H. Fitts, mayor.

Fla., Cocoa — Plans sewerage system. $55,000. J. E. Craig, 427 King St., Jacksonville, engr.

O., Cincinnati—Plans election to vote on $200,000 bonds Millcreek sewer. F. Krug, City Hall, engr.

Mich., Detroit—Plans vitr. crock sewers, 2,310 ft. 12-18 in. in Laterals 4055 and 4056, 8,252 ft. 12-20 in. in Laterals 4057 and 4060, 7,928 ft. 12-24 in. in Laterals 4058 and 6125, 1,333 ft. 10-24 in. in Lateral 4059. G. Jerome, city engr.

Sewers (Continued)

Mich., Otsego—See "Streets and Roads."

Ill., Bensenville — Making preliminary plans 20,000 ft. 8- to 18-in. sanitary sewer and disposal plant, $200,000; 10- to 36-in. storm water sewer, $110,000. E. Hancock, 2047 Ogden Ave., Chicago, engr. Noted June 27.

Ill., Posen—Making preliminary surveys complete sewerage system and disposal plant. $200,000. E. Hancock, 2047 Ogden Ave., Chicago, engr.

Ark., Helena—Having preliminary plans prepared storm and sanitary sewers in downtown district. $60,000.

Tex., Ft. Worth—See "Streets and Roads."

Tex., Kerrville — Voted $78,000 bonds, sewerage disposal plant and sewer extensions. Municipal Eng. Co., 715 Praetorian Bldg., Dallas, engrs. Noted Nov. 29.

Okla., Chickasha — Election Dec. 28, to vote on $70,000 bonds for 10,000 ft. 24 in. vitr. clay outfall sewers and disposal plant. J. C. Milliken, Chickasha, engr.

Calif., Santa Monica — City plans joint outlet sewer from Topango to Hyperion for cities of Santa Monica, Los Angeles, Venice and Pacific Palisades Assn. To exceed $25,000.

Calif., Pasadena — Jan. 10, to vote on $125,000 bonds for sewer drain from municipal sewer farm to Rio Hondo Wasn.

Que., Montreal—Plans 2 x 3 brick sewers, 1,369 ft. in Belanger St. $13,030, 3,309 ft. in 14th Ave. $25,300, 3,354 ft. in 12th Ave. $26,430, 930 ft. in 15th Ave. $15,100, 7,137 ft. in 11th Ave. $62,760, 1,135 ft. in Dandurand St. $11,900, 3,486 ft. in 13th Ave. $26,970, 3,392 ft. in Lafond St. $25,480, 4,975 ft. in Tolhurst St. $35,534, 1,798 ft. in Henry Julien Ave. $10,907, 100 ft. in Clay St. $1,872. E. Gauthier, asst. city clk.

BIDS DESIRED

N. Y., Johnson City—Jan. 2, by Bd. Village Trustees 8,952 ft. 8- to 42-in. rein.-con. and vitr. clay sewers from Riverside Dr. along tracks of Delaware, Lackawanna & Western R.R. to Willow and Division Sts., Grand, Burbank, Farr and Lincoln Aves., $65,000. F. A. Tillman, Municipal Bldg., engr. Noted Dec. 13.

Tenn., McKenzie—Jan. 3, by Mayor and City Council, construction vitr. sewerage system and settling tanks. B. H. Klyce, 506 4th and 1st Natl. Bank Bldg., Nashville, engr.; adv. E. N.-R. Dec. 27.

Ill., Granite City—Dec. 31 approximately 5,000 lin.ft. sewers in Dists. 5 and 6. $54,000. W. W. Kerch, 1st Natl. Bank Bldg., engr.

Mo., Carrollton — Jan. 3, by City Clerk, City Hall, 6 mi. 6- to 21-in. sewers. $50,000. D. W. Frush, Carrollton, engr. Noted Aug. 9.

BIDS RECEIVED

N. Y., Brooklyn — E. Riegelmann, boro pres., Boro Hall, Dec. 19, temporary sewers in Clarendon Rd., from Tomasetti & Co., Inc., 1133 60th St., 78.5% engrs. est. ($32,785). Noted Dec. 13.

N. Y., New York — H. Bruckner, pres. Bronx Boro, Dec. 19, sewers in Zulette Ave., from MacDonald & Wilson Co., $17,937; Findlay Ave., from J. V. Timoney Constr. Co., 220 East 201st St., $11,502; Melville St., from F. Gasparine, $41,108; Rhinelander and Wilson Aves., from A. Gregorio & Co., $59,942 and $28,252 respectively. Noted Dec. 13.

Pa., Phila.—Sewers in (1) Bridge St. (2) 18th St. (3) Mifflin St. (4) Luzerne St. (5) Broad St. (6) Emily St. (7) Mitchell St. (8) Wagner St. (9) Madison St., from C. DiPasquali, 1215 South 17th St., (1) $6,218 (4) $2,133; A. DiSandro & Son, 39067 5th Ave., (2) $2,897 (8) $3,619; J. Lombardi, 601 Lincoln Bldg., (5) $2,284 (7) $3,914 (9) $3,608; McCoul Constr. Co., 5033 Duffield St., (3) $2,364; A. DiVito, Phila., (6) $3,766.

O., Toledo—W. T. Jackson, dir. Pub. Serv., Dec. 18, Relief Sewer 1432, incl. concrete bulkhead and 10,527 lin.ft. 30- to 96- in. (a) concrete segmental block (b) vitr. segmental block (c) monolithic concrete pipe, from Anderson & Campbell, 81 Petersboro St., Detroit, Mich., (a) $264,396; R. Mercier, Griswold St., Detroit, Mich., (b) $266,013; Graham & Henderson, Cleveland, (c) $288,656. Noted Dec. 6.

Calif., Morgan Hill—Sewerage system and disposal plant from Schultz Constr. Co., 46 Kearny St., San Francisco, $51,191. Noted Dec. 13.

CONTRACTS AWARDED

R. I., Providence—Reconstructing 250 ft. 48 in. brick sewer, etc., to W. V. Polleys & Co., 217 Turks Head Bldg. Noted Nov. 15.

N. Y., Brooklyn — E. Riegelmann, boro pres., Boro Hall, sewers in Fort Hamilton Parkway, engrs. est. $17,100, 80th St. $3,398, and East 28th St. $1,867, to C. F. Vacharias, 645 40th St., 78%, 90% and 98.7% of engineers est. respectively; Ferris St. $4,217, to Tomassetti & Co., 1133 60th St., 98%; Fort Hamilton Parkway between 83rd and 84th Sts. $1,813. Fort Hamilton Parkway between Bay Ridge Ave. and 68th St. $1,625, and Fort Hamilton Parkway between 72nd and 73rd Sts. $1,542, to Nazzarro & Querriero, 101.99%, 98% and 97.9% respectively; Douglass St. $1,200, and Ave. N $800, to R. Iovino, 84% each. Noted Dec. 13.

W. Va., Bluefield—C. E. Ridley, city mgr., 16 mi. sanitary sewers, ditching to Pace Constr. Co., Roanoke, Va.; concrete box culverts to C. A. Haggerty, 18 Negus St., Webster, Mass.; constructing sanitary and storm sewers, to J. R. Vaughan & Co., Roanoke, Va., total $349,775. Noted Nov. 22.

N. C., Raleigh—See "Streets and Roads."

La., Baton Rouge—Comn. Council, sewerage system to J. B. McCrary Co., Citizens and Savings Bank Bldg., Atlanta, Ga., $126,855.

Mich., Holland—Common Council at office R. Overweg, city clk., 1,900 ft. 60 in. and 350 ft. 3 ft. x 7 ft. concrete storm sewer, to Hammen & Co., 4612 Woodward Ave., Detroit, $38,200. Noted Nov. 15.

Waste Disposal

PROPOSED WORK

Tex., Austin—Voted $50,000 bonds for incinerator. C. E. Leonard, city engr. Noted Nov. 15.

CONTRACTS AWARDED

O., Willow (Brooklyn, P. O.)—F. Kohler, mayor, and Bd. Control of Cleveland, 500 ton garbage disposal plant, here, to C. O. Bartlett & Snow Co., French and Winter Aves., Cleveland, $930,000. Noted June 14, under "Cleveland."

Bridges

PROPOSED WORK

N. Y., Leroy—Plans 150 ft. 1 or 2 span bridge, 30 ft. wide, two 6 ft. walks on each side over Oatka Creek. $50,000. Engineers name withheld.

Ga., Macon—Comrs. Bibb Co. plan bridge over Stone Creek. $50,000.

Wis., Kaukauna—City plans 2 rein.-con. bridges over Fox River. $80,000 for both. Harrington, Howard & Ash, 1012 Baltimore St., Kansas City, Mo., engrs.

Missouri—State Hy. Dept., Jefferson City, rejected bids Nov. 27, one 37½ ft. rein.-con. deck girder, two 20 ft. and three 18 ft. rein.-con. slab spans, etc., over tracks of Chicago & Alton R.R., State Project Route 2, Sect. 6A, Jackson Co. Noted Dec. 6.

Wash., Arlington—Snohomish Co. (Everett), takes bids about Jan. 1, bridge over Stillaguawamish River, here, steel and concrete, one 210 ft. and one 100 ft. span, piling approach, 5 ft. sidewalks. $70,000. M. M. Caldwell, Central Bldg., Seattle, engr. Noted June 7 under "Everett."

California—State Hy. Dept., Sacramento, making plans 400 ft. concrete bridge, six 60 ft. spans, 21 ft. roadway, over Cottonwood Creek, Shasta and Tehama Counties. R. M. Norton, state highway engr.

California—State Hy. Dept., Sacramento, plans bridge over Chowchilla River, Madera Co. To exceed $25,000. County will appropriate $13,000 toward cost. R. M. Morton, state highway engr.

Que., St. Anne de Bellevue—Provincial Government, Quebec, plans 1,382 ft. steel bridge from here to Isle Perrot, rein.-con. floor, asphalt roadway, 4 ft. concrete sidewalks, concrete or stone wall approaches, also space for Canadian Pacific and Canadian Natl. Ry. tracks. $450,000. C. Denis, Shaughnessy Bldg., Montreal, engr.

B. C., Vancouver — Plans to reconstruct portion of Connaugh Bridge, 350 ft. steel deck plate girder, 60 ft. wide. $120,000. F. L. Fellowes, city engr.

BIDS DESIRED

Fla., New Smyrna—Jan 3, by Comrs. Volusia Co., (DeLand), steel draw bridge over Indian River, concrete pivot pier, creosoted pile trestles, 45,000 cu.yd. earth embankment, 400 cu.yd. concrete, also creosoted timber trestle bridge across Callalera Creek, 9,500 cu.yd. excav. $100,000. N. A. Hobard, Lutz Bldg., engr.

Mo., St. Louis — Jan. 22, by Bd. Pub. Serv., 208 City Hall, rein.-con. bridge to carry Gravois Ave. over River Des Peres, removing 5,130 cu.ft. old masonry, 4,630 cu.yd. grading, 33,270 cu.yd. excav., 90,100 cu.ft. concrete, 398,200 lb. reinforcing, 18,550 sq.ft. brick paving, 5,965 sq.ft. walks, etc. $106,000. L. R. Bowen, 301 City Hall, engr.

Tex., Robert Lee—Jan. 3, by E. J. Stockton, judge Coke Co., 237 ft. bridge over Oak Creek, one 70 ft. steel span, concrete piers and approaches. $26,000. J. E. Beavers, Bronte, co. engr.

BIDS RECEIVED

Tex., McKinney—Collin Co., 6 bridges on State Highway 6, rein.-con. pile trestles, concrete girders and steel spans, forty-three 20 ft., one 80 ft., four 31 ft. and one 43 ft. spans, from Brown-Abbott Co., Wilson Bldg., Dallas, $81,447. Noted Dec. 6.

CONTRACTS AWARDED

North Carolina — State Hy. Comn., Raleigh, bridging (**S. P. means State Project**) rein.-con. bridges and culverts on **S. P. 791 A**, Yadkin Co. to Luten Bridge Co., 405 East 4th Ave., Knoxville, Tenn., $40,046; **S. P. 237 A**, Johnston Co., to T. Dameron & Sparling, Nashville, $56,885; **S. P. 513**, Caswell Co., to R. W. Curtis, Lynchburg, Va., $66,643; **S. P. 148**, Hertford and Gates Counties, to Roanoke Iron & Bridge Co., Roanoke, Va., $134,648; **S. P. 912**, Cherokee Co., to W. T. Moore, Andrews, $100,270. Noted Dec. 13.

Ga., Savannah—State and Chatham Co., draw span of bridge over Savannah River, here, to Virginia Bridge & Iron Co., Roanoke, Va., $28,000.

Fla., Orlando—Orange Co. bridge over west fork of St. Johns River, 700 ft. superstructure, one 100 ft. steel span, concrete abutments, to Austin Bros. Bridge Co., 1813 Clarence St., Dallas, Tex., $39,515.

Ohio—See "Streets and Roads."

Wis., Hubbleton—State Hy. Dept., Madison, bridge, here, Project 316, Jefferson Co., to Widell Co., First Natl. Bank Bldg., Mankato, Minn., 1,905 cu.yd. Class A concrete $23.25, etc., total $50,909.

Missouri—State Hy. Dept., Jefferson City, constructing bridges over stream, De Kalb Co., over stream, Buchanan Co., over Castor River, Madison Co., and over Morgan Branch, De Kalb Co., to M. E. Gilliox, Monett, $6,051, $9,946, $25,947 and $7,792 respectively, over Little River Diversion Channel, and over Drainage Ditch, Cape Girardeau Co., to List & Weatherly Constr. Co., $416 Ry. Exch. Bldg., Kansas City, $135,633 and $7,450 respectively, over stream, Pettis Co., to Bertman & Menefee, Sedalia, $2,582, over Coon Creek, Taney Co., to Easley Bros., Aurora, $8,644, over Robins Draft, Howell Co. ,to Muskogee Contg. Co., Tulsa, Okla., $12,624, over Cow Branch, Atchison Co., to G. W. Condon, 510 Farnum Bldg., Omaha, Neb., $11,786. Noted Dec. 6.

Ore., Seaside—Rein.-con. bridge, three 50 ft. spans, 50 ft. wide, on Bway. over Necanicum River, to J. H. Tilman Co., Portland, $27,437.

Ont., Niagara Falls—See "Unclassified."

Dams

PROPOSED WORK

Mich., Marquette — See "Industrial Works."

Calif., Coronado (San Diego P. O.)—See "Waterworks."

BIDS DESIRED

N. Y., Kingston—Feb. 7, by Bd. Water Comrs., City Hall, addition to Coopers Lake Dam, 2,500 cu.yd. earth fill, 410 cu.yd. rein.-con., etc. $40,000. H. Barker, 36 State St., Albany, engr.

Railways

PROPOSED WORK

Connecticut—Connecticut Co., State St., Hartford, plans double tracking Park Rd. from Prospect Ave. to Main St. in West Hartford (Hartford P. O.) $50,000, and Blue Hills Ave., Hartford, $25,000.

Virginia—Atlantic Coast Line R.R., Wilmington, N. C., plans to expend $1,415,000 for various improvements between Richmond, Va., and Jacksonville, Fla., incl. buildings, signal appliances, tracks and other structures. J. E. Willoughby, Wilmington, N. C., ch. engr.

Kentucky—Chesapeake & Ohio R.R. Co., 82 3East Main St., Richmond, Va., plans 4 mi. third track from Ashland to Russell. $125,000. H. Frazier, ch. engr.

CONTRACTS AWARDED

Texas—North Texas Traction Co., 3rd and Main Sts., Ft. Worth, extension to

Railways (Continued)

Riverside carline, to Stone & Webster, 147 Milk St., Boston, Mass. $25,000.

California—Municipal Railway System of Eureka, 460 tons 70 lb. rails to Rolph-Mills Co., 149 California St., San Francisco, $52.50 per ton; 325 tons high T rails and joint plates, to U. S. Steel Products Co., Rialto Bldg., San Francisco, $59.43 per ton and $4.42 per cwt. Noted Dec. 20.

California—Southern Pacific R.R. Co., 65 Market St., double tracking 3 units of railroad between Truckee and Summit, in Sierra Nevada mountains, to Utah Constr. Co., Phelan Bldg., San Francisco.

Excavation, Drainage, Irrigation

PROPOSED WORK

Fla., Ft. Lauderdale—Broward Co. election Jan. 5, to vote on $50,000 bonds to complete New River Inlet.

Minn., Caledonia—Houston Co. preparing plans 1,292,644 cu.yd. excav., 63,500 cu.yd. excav. for pumping station installation of 80,000 gal. per minute capacity, in County Drain and Conservancy Dist. 1. $428,000. Central States Eng. Co., Muscatine, Iowa, engrs.

Texas—Gulf, Colorado & Santa Fe R.R., Galveston, having plans prepared 145 mi. heavy steel railway from Sweetwater to Lometa. $1,000,000. F. Merritt, Union Sta., Galveston, ch. engr.

Wash., Grand Dalles—North Dalles Irrigation Dist. had preliminary plans prepared and will probably take bids about Feb. 1, for system to irrigate 5,000 acres land, near here. Water to be taken from Klickitat River, main supply line 12 mi. canal, 8 mi. flume and several short inverted siphons and tunnels. $425,000. Election in January to vote on bonds. W. J. Roberts, 616 Puget Sound Bank Bldg., Tacoma, engr.

Calif., San Diego—Vista Irrigation Dist. plans to vote bonds for distribution system from Henshaw Dam and distributed to every 40 acre tract within Vista Irrigation Dist., incl. 16 mi. main canal, concrete lined, and concrete and steel pipes. J. B. Lippincott, Central Bldg., Los Angeles, consult. engr.

Calif., Ventura—Ventura Co. D. D. 2, plans election to vote on $300,000 bonds for drainage and irrigation system for approximately 20,000 acres, incl. levees, canals and pumping plants. C. Petit, Ventura, engr. Noted Dec. 6.

BIDS DESIRED

Miss., Senatobia—Jan. 3, by Bd. Drainage Comrs. Tate-Panola D. D. 1, Tate and Panola Counties, at Court House, 309,400 cu.yd. excav. in main canal, 90,000 cu.yd. excav. Partee Canal, 22,000 cu.yd. excav. enlarging old ditch in Panola Co. Southern Eng. Co., Clarksdale, engrs. Noted Nov. 15.

La., Lake Charles — Jan. 18, by Police Jury Calcasieu Parish, Court House, constructing Sects. 3 and 5 of navigation channel. F. Shutts, parish engr.; adv. E. N.-R. Dec. 27.

O., Cleveland — Winterbottom-Connelly Co., 17316 Madison Ave., taking bids 40,000 cu.yd. trench excav. on drainage system.

CONTRACTS AWARDED

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, dredging 15,000 cu.yd. scow measurement in Gowanus Canal, and 20,000 cu.yd. in Wallabout Canal, to W. E. Potter, $14,535 and $15,980 respectively; 40,000 cu.yd. in Newtown Creek, to J. McSpirit, $25,600; 40,000 cu.yd. foot of 64th St., to Columbia Dredging Corp., 30 Church St., New York, $11,160. Noted Dec. 20.

Tex., Dallas—Levee Impvt. Dist. 9, ditching, etc., to M. H. Edmonson, Greenville, $54,000.

Calif., Manteca—South San Joaquin Irrigation Dist., 542,000 sq.ft. concrete canal gunite lining, to J. S. Greaves, Oroville, $0.084 per yd.; 50,000 sq.ft. asphalt lining, to Hewitt-Davenport, San Francisco, $0.093 per sq.ft. Owner to furnish materials. Noted Nov. 29.

B. C., Vancouver—Canadian Pacific Ry., Windsor Sta., Montreal, Que., dredging mud from bottom of inlet and filling in with rock and gravel for foundation of new pier, 75,000 cu.yd. floating dredgework and 400,000 yd. rock and gravel, to Northwestern Dredging Co., 510 Hastings St. W., $60,000.

Streets and Roads

PROPOSED WORK

Conn., Hartford—Plans paving Sigourney St., Asylum and Franklin Aves., asphalt on concrete; Capitol Ave., asphalt or concrete on concrete; Westbourne Parkway, Commerce, Ridgefield and Vine Sts., concrete; also macadamizing 15 streets. Total $387,000. R. N. Clark, city engr.

Conn., New Britain—Plans paving Wells St., bituminous macadam. $25,000. J. D. Williams, city engr.

N. Y., Rochester—Plans paving Farragut St., willite, $31,000, about ¾ mi. Middlesex Rd., 20 ft., asphalt, $33,500; curbing, grading and paving ½ mi. Halold, Dana, Boxart, Castleman and Scheib Sts., $25,000; 6 ft. widening, setting back curb to conform and repaving Monroe Ave., brick, $50,000. Will mature in spring. C. A. Poole, City Bldg., engr.

Pa., Wilkes-Barre—Plans to pave, grade and curb 1 mi. Northampton, Priestly, Reese, Berlin, Sylvanus, Dana, Moyallen, New Empire, Meade and Sheridan Aves. $40,000. B. K. Finch, city engr.

North Carolina—State Hy. Comn., Raleigh, rejected bids Nov. 27, grading and topsoiling 16.9 mi. State Project 912, Cherokee Co., $150,000; grading and bridging 7.02 mi. State Project 952-B, Jackson Co., $60,000; concrete or asphaltic paving 8.2 mi. State Project 318, Brunswick Co., $246,000. Will readvertise shortly. C. M. Upham, comr. Noted Dec. 13.

N. C., Burlington—Soon lets contract additional street and sidewalk paving. $25,000. E. B. Horner, mayor.

Fla., Arcadia—De Soto Co. election soon to vote on $45,000 bonds for road from Arcadia-Manitee Co. line; $35,000 No. 2, North Arcadia-Nocatee Rd.; $30,000 for road from end of brick to Highlands Co. line; $30,000 to complete Carlston Field Rd.

Fla., Ft. Lauderdale—Broward Co. election Jan. 2, to vote on $250,000 bonds for roads. H. C. Davis, Ft. Lauderdale, engr.

Ala., Birmingham—Plans chirt and asphalt paving and some grading on 10 blocks 21st, 22nd, 23rd Sts., North Ave., 13th Ave. N., and 15th St. S. $105,315.

Ala., Selma—Sold $50,000 bonds paving Church St.

La., Vernon — Jackson Parish election Jan. 9, to vote on $250,000 bonds to build 2 additional improved highways under supervision of State Hy. Comn., Reymond Bldg., Baton Rouge, one highway from Ruston to Columbia, and other Jackson-Enos Monroe Highway.

Tennessee — Dept. Hys. & Pub. Wks., Nashville, plans to construct 809 mi. road, 16 and 18 ft., mostly gravel, concrete and bituminous macadam, $8,000,000. J. G. Creveling, highway comr.

O., Cleveland—Cuyahoga Co. plans brick paving Northfield Akron Rd. $158,200. F. Lander, Court House, engr.

Ind., Shelbyville—Shelby Co. plans concrete paving 29,532 sq.yd. Lydia Jones Rd. $74,000. G. C. Oltman, Shelbyville, engr.

Mich., Otsego—Voted $80,000 bonds for paving work, $10,000 bonds for watermains and $5,000 for sewers.

Ill., Cairo — Making preliminary plans grading, concrete paving, concrete curbing etc., various streets. $45,000. G. F. Dewey, 610 Ohio St., engr.

Ill., Elmhurst—Making preliminary plans grading, curbing, guttering and bituminous macadam paving about 11,000 ft. in Cumings Addition. $120,000; 2nd St., 49,000 sq.yd. bituminous macadam on concrete, 39,000 lin.ft. concrete curbing. E. Hancock, 2047 Ogden Ave., Chicago, engr.

Ill., La Grange—Making preliminary plans grading, curbing, guttering and surfacing 7,000 ft. in northwest section, 14,000 lin.ft. concrete curb, 14,000 sq.yd. concrete, etc., $75,000; 3,000 ft. Maple, Benton and 9th Sts., 6,000 lin.ft. concrete curb, 10,000 sq.yd. concrete base. 10,000 sq.yd. either hot mix, Kentucky rock or asphalt surfacing. $35,000. E. Hancock, 2047 Ogden Ave., Chicago, engr.

Wisconsin—Following are county appropriations for roadwork during 1924. Sawyer Co. $46,419, E. J. Collett, Hayward comr.; Outagamie Co. $207,987, A. G. Brusewitz, Appleton, comr.; Waukesha Co. $104,898, C. J. Hahn, Waukesha, comr.

Wis., Hudson—St. Croix Co. appropriated $69,092 for road work during 1924. J. Caffrey, Hammond, comr.

Wis., Shorewood (Milwaukee P. O.) — Making plans concrete paving ¾ mi. Riverside Dr., 24 ft. $25,000. H. A. Schmitt, Village Hall, engr.

Ia., Cedar Falls — Will probably take bids in January, paving 10 blocks or more of Lincoln and North Franklin Sts. To exceed $30,000. C. H. Streeter, city engr.

Kan., Leavenworth — Leavenworth Co. having plans prepared paving 3.8 mi. roads. $30,000. L. C. Clark, Leavenworth, engr.

Wyo., Cheyenne—Will probably take bids in January 7,600 ft. grading, curbing, guttering, paving, etc., 24 blocks in Pershing Heights Dist., incl. Warren, House, 1st, 2nd, 3rd, 4th and 5th Sts., 40 ft. $100,000. J. A. Bruce, Cheyenne, engr.

Mo., Hannibal—Soon takes bids grading, concrete curbing, guttering, 6 in. rein.-con. surfacing 6,015 sq.yd. Hill St. from Main to 3rd Sts., 4th to 3rd Sts., 5th to 7th Sts., and Front to Main Sts., also alley in Block 41. $22,500-$25,000. W. R. Gettier, City Hall, engr. Noted Nov. 15.

Mo., St. Louis—Soon takes bids grading 2,365 cu.yd. Nashville St., $3,500; grading and surfacing 3,090 sq.yd. Pennsylvania St. and Indiana Ave., warrenite on concrete, $17,750; grading, surfacing, concrete curbing, guttering 6,615 sq.yd. Ivanhoe St., willite or bitulithic on concrete, $37,500; resurfacing 14,200 sq.yd. 9th and Penrose Sts., bitulithic on concrete, $39,500. W. W. Horner, 300 City Hall, engr.

Mo., Springfield — Making preliminary plans widening about 5 blocks Traffic St. from 18 to 50 ft. $75,000.

Tex., Austin—Travis Co. voted $1,500,000 for bituminous macadam paving, gravel surfacing and bridging state highways and county roads, 16 ft. and 18 ft. surfacing. O. Leonard, co. engr. Noted Nov. 15.

Tex., Batesville — Zavalla Co. election soon to vote on approximately $100,000 bonds roads in La Pryor Dist.

Tex., Denton—Denton Co. making plans grading and gravel surfacing 8 mi. State Highway 39 from Justin Rd. to Wise Co. line, 16 ft., $76,000; soon takes bids grading and gravel surfacing 6 mi. State Highway 39 from Little Elm to Collin Co. line, 16 ft., $45,000. H. T. Brewster, co. engr.

Tex., Ft. Worth—Baker & Von Zuben, engrs., Ellison Bldg., making plans walks and sewers, etc., for Riverside Park, 300 acre addition to Ft. Worth. $75,000-$100,000. Owners name withheld.

Tex., Hillsboro — Voted $15,000 bonds paving 2nd St., brick or bituminous. Total cost approximately $40,000. Property owners to pay ⅓ of cost. T. A. Bullock, city engr.

Tex., Karnes—Karnes Co. voted $125,000 bonds grading and surfacing roads. O. N. Powell, Kenedy, engr.

Tex., Sinton—San Patricio Co. voted $25,000 bonds highway improvement. F. M. Percival, Rockport, co. engr. Noted Nov. 29.

Okla., Lexington—Plans grading and paving 5 blocks Main St. and McLean Ave., 7,000 sq.yd. concrete, 3,600 lin.ft. curbing, etc. $30,000. Engineer not selected.

Okla., Stillwater—Plans grading and paving 11 blocks Main and 14th Sts., 7,950 sq. yd. concrete, 5,800 lin.ft. curbing, 3,000 cu. yd. excav. $38,000. C. A. Wood, Stillwater, engr.

Ore., Portland—Plans widening 9 blocks in business district. $2,348,193. O. Laurgaard, city engr.

California—State Hy. Dept., Sacramento, making plans paving 9 mi. Stockton Rd., San Joaquin Co., concrete; from Manteca to south boundary, concrete, and from Manteca to French Camp, concrete or asphalt, both San Joaquin Co.; reconstructing and paving Rincon Grade, Santa Barbara Co., concrete; resurfacing 12 mi. Redwood Highway between Santa Rosa and Willowbrook, Sonoma Co.; constructing 6 mi. Tahoe-Ukiah Rd. west of Sutter City, Sutter Co. R. M. Morton, state highway engr.

California—State Hy. Comn., Sacramento, making plans paving approximately 12 mi. in Calabassas Dist., Los Angeles Co. R. M. Morton, state highway engr.

California—State Hy. Dept., Sacramento, making plans gravel surfacing 38 mi. Pollock-Dunsmuir Rd., Siskiyou Co. R. M. Norton, state highway engr.

Calif., Chico—Will take new bids paving various streets. $150,000. Former contract rescinded. F. A. Lammiman, city engr.

Calif., Colton—Had plans prepared improving 9th St., 235,054 sq.ft. 5 in. concrete pavement with 1 in. surface, 1,328 sq.ft. walks, etc.

Calif., Fresno—Fresno Co. (Fresno) and Monterey Co. (Salinas) plan to improve 29 mi. San Lucas-Coalinga Highway. To exceed $800,000. C. P. Jensen, Fresno, and H. Cozzens, Salinas, county road surveyors.

Calif., Lodi—Had plans prepared improving portions Garfield Ave., Harold St., etc., 217,031 sq.ft. grading, 206,590 sq.ft. 2½ in. asphaltic concrete base with 1½ in. warrenite bituminous surface, 16,080 sq.ft. concrete gutters and 12,048 lin.ft. concrete curb. To exceed $48,000. L. F. Barzellotti, city engr.

Calif., Los Angeles—Los Angeles Co. soon takes bids improving 4.06 mi. Las Flores Canyon Rd., Rd. Dist. Impvt. 181, grading, rolling and oiling 16 ft. roadway, etc. To exceed $63,000.

Calif., Mill Valley—Had plans prepared improving Old Mill St., Lovell Ave., etc., 4,624 cu.yd. grading, 121,007 sq.ft. 5 in. concrete pavement, 19,044 sq.ft. macadam pavement, 2,730 lin.ft. concrete curb and gutter, 2,758 sq.ft. concrete gutter, etc. J. C. Oglesby, Cheeda Blk., San Rafael, engr.

Streets and Roads (Continued)

Calif., Oakland — Alameda Co. plans rock surfacing and oiling Redwood extension of Skyline Blvd. $25,000. G. A. Posey, co. surv.

Calif., San Fernando—Plans 85,000 sq.ft. 6 in. asphaltic concrete paving, laying concrete curbs, walks and gutters, and installing ornamental lighting system on various streets. To exceed $25,000. G. H. Schwabland, city engr.

Calif., Santa Ana—Orange Co. plans to improve Yorba Bridge Rd., 48,600 sq.ft. 5 in. asphaltic concrete pavement, 1,500 cu. yd. gravel shoulders, etc. J. L. McBride, co. road comr.

P. C., Vancouver—Voted $500,000 bonds for permanent surfacing various streets. F. L. Fellowes, city engr. Noted Nov. 1.

BIDS DESIRED

N. Y., Buffalo—Jan. 3, by Commissioner Pub. Wks., Municipal Bldg., paving and repaving Highgate and Copsewood Aves., Freeman and Rhode Island Sts., vitr. brick or asphalt on 6 in. concrete. To exceed $40,000. C. E. P. Babcock, Municipal Bldg., engr.

Ga., Albany—Jan. 7, paving 7 blocks Jefferson St., 15,430 sq.yd. 1½ in. sheet asphalt surfacing, 1,200 tons black binder. P. F. Whittier, dir. pub. wks.

Louisiana—Jan. 15, by State Hy. Dept., Baton Rouge, 5.43 mi. State Project 336-A, Opelousas-Ville Platte Highway, St. Landry Parish, also furnishing 7,650 cu.yd. washed gravel or alternate 10,200 cu.yd. sand clay gravel. J. M. Fourmy, ch. engr.

Ill., Elmhurst—Taking bids and opens same about Jan. 15, grading curbing and paving 27,000 ft. Spring Rd., 22 ft., 54,000 lin. ft. concrete curb, 67,000 sq.yd. cement concrete, vibrolithic concrete, warrenite or asphaltic concrete. E. Hancock, 2047 Ogden Ave., Chicago, engr.

Mo., Richmond Heights (St. Louis, P. O.) —Jan. 2, by G. H. Skillman, city clk., 7409 La Veta Ave., grading, concrete curbing, guttering and paving 17,600 sq.yd. Bellvue Ave., 3 in. trap rock asphalt penetration on 6 in. macadam. $60,000. F. Pitzman, 615 Chestnut St., St. Louis, engrs.

Mo., St. Louis—Jan. 22, by Bd. Pub. Serv., 208 City Hall, rein.-con. paving 130,000 sq. yd. roads for St. Louis Training School for Feeble Minded. $43,000. L. R. Bowen, 301 City Hall, engr. Noted Dec. 13.

Tex., Del Rio—Jan. 9, by W. F. Littleton, judge Val Verde Co., grading and gravel surfacing 12.74 mi. State Highway 12, Federal Aid Project 392, 16 ft. Noted Nov. 8.

Tex., Franklin—Jan. 11, by J. Reid, judge Robertson Co., grading and gravel surfacing 9.74 mi. State Highway 43 A, 16 ft. $77,261. L. A. Peterman, Hearne, engr.

Tex., Robert Lee—Jan. 3, by E. J. Stockton, judge Coke Co., grading, etc., 14.47 mi. State Highway 70, 16 ft., $40,000; 11.477 mi. State Highway 70, 16 ft., $42,000. J. E. Beavers, Bronte, co. engr.

Tex., Rock Springs—Jan. 15, by W. E. Simpson Co., engrs., 414 N. B. C. Bldg., San Antonio, highway improvement, 17.13 mi. macadam road, 16 ft., for Edwards Co. $154,000. Noted Dec. 6.

Wash., Seattle — Jan. 11, by Bd. Pub. Wks., paving, curbing, etc., Jackson St. et al., 20,000 sq.yd. vitr. brick block on 9 in. concrete, 10,000 sq.yd. (street railway portion) vitr. brick block on 7 in. concrete. $475,000. J. D. Blackwell, city engr.

California—Jan. 7, by State Hy. Comn., Sacramento, improving 13.1 mi. Shoup Ave. to west city limits of Los Angeles, Los Angeles Co., 52,000 cu.yd. unclassified excav. 21,080 cu.yd. Class A concrete pavement, 385 cu.yd. Class A concrete in structures, 37,970 sq.yd. reinforcing steel in pavement, etc. R. M. Morton, state highway engr.

Calif., Hanford—Regrading and repaving with asphaltic concrete portions 6th, 7th, 8th, Douty and Irwin Sts., from California Constr. Co., Hanford, $48,867.

Calif., Oroville—Jan. 7, by Supervs. Butte Co., extending 5.1 mi. Oroville-Quincy Rd. Will be graveled at later date. H. H. Hume, co. engr.

Calif., Stockton—Jan. 7, by A. L. Banks, clk., grading, curbing and paving portions East Worth, Worth, East Anderson Sts., etc., 7,116 lin.ft. concrete curb and gutter, 77,878 sq.ft. 4 in. crushed rock base with 2 in. asphaltic concrete surface. W. B. Hogan, city engr.

BIDS RECEIVED

N. Y., New York—J. Miller, pres. Manhattan Boro, Municipal Bldg., Dec. 18, granite block repaving 1st Ave. and West Bway., from J. Meehan & Son, 74 Cortlandt St., $47,070 and $88,801 respectively. Noted Dec. 13.

N. Y., New York—H. Bruckner, pres. Bronx Boro, 3rd and Tremont Aves., Dec. 19, grading, curbing and laying sidewalks, etc. on Reservoir Pl., from L. Di Minna, $5,176; grading, etc. Tyndall Ave., from I. F. Cavaluzzo, 1538 Walton Ave., $16,040; sheet asphalt repaving East 188th St., from Interboro Asphalt Co., 2306 Creston Ave., $8,295. Noted Dec. 13.

Pa., Ebensburg—Comrs. Cambria Co., 12,244 ft. Ligonier Pike, rein.-con., from E. R. Vipond, 604 Penn St., Hollidaysburg, $124,631; 15,000 ft. Reade Twp., vitr. brick on concrete, from Burnside Constr. Co., Burnside, $156,943.

Pa., Nanty-Glo—Boro. Council, concrete paving 2,477 lin.ft. 2nd St. from J. L. Elder, Ebensburg, $49,799.

Md., Baltimore—Bd. Park Comrs., Lexington and Gay Sts., 50,000 cu.yd. grading and filling at Mt. Royal Reservoir, Mt. Royal and North Aves., from H. O. Firor & Co., 1707 West Pratt St., $0.59.

N. Y., New York—G. A. Whalen, comr. Plant & Structures, Municipal Bldg., reconstructing pavement, curbs and headers on south clearance roadway alongside approach of Williamsburg bridge, from Sicilian Asphalt Paving Co., 41 Park Row, $31,143. Noted Dec. 13.

Tex., Henderson—Rusk Co. grading and gravel surfacing 7.63 mi. State Highway 15-A, State Aid Project 419, 16 ft., from Rusk Co., c/o J. T. Watson, co. judge, Henderson, $45,501.

Tex., Houston — Harris Co., bituminous topping Katy Rd., from Uvalde Rock Asphalt Co., Bankers Mort. Bldg., Uvalde rock asphalt 1½ in. $1.15, 1 in. $0.85; Hayden & Austin, Santa Fe and Runnels Sts., inverted penetration 2 course $0.60, one course $0.30. Engrs. est. to exceed $25,000. Noted Nov. 29.

Tex., McKinney—Collin Co. grading and surfacing with rein.-con., 6.19 mi. State Highway 6, Federal Aid Project 402, 18 ft., from Tibbetts Constr. Co., 209½ West 8th St., Ft. Worth, $220,119. Noted Nov. 29.

Ariz., Tucson—Grading, curbing and paving Speedway between Stone and Campbell Aves. and between Campbell Ave. and Tucson Blvd., 87,150 sq.yd. sub grade, 55,920 sq.yd. paving, 16,504 lin.ft. 14 in. concrete curb, 63,370 sq.ft. concrete sidewalk, etc., from Borderland Constr. Co., Tucson, 3½ in. asphaltic concrete base, 1½ in. asphaltic or Warrenite surface, $158,725; Tucson Co., Tucson, 5 in. concrete $182,087, 4 in. Willite $162,137.

Calif., Los Angeles — Improving Vernon Ave. from Van Ness to Mesa Dr., from W. Liddington, 420 East 60th St., grading lump sum $4,990, 166,477 sq.ft. concrete pavement $0.2325, bituminous base pavement $0.12, 125 ft. curb $0.70, 2,452 ft. house sewers $1.50, etc., rein.-con. culvert $340.

Calif., San Bruno—Grading, paving and building sewers in Elm, Cypress, Acacia, Sts., etc., in Huntington Park, 120,000 sq. ft. asphaltic concrete base with Warrenite surface, from Municipal Impvt. Co., 306 12th St., Oakland $90,224. Noted Dec. 13.

Calif., Santa Rosa—Sonoma Co. grading 38.53 mi. Jenner-Mendocino Co. Highway 240,000 cu.yd. excav., etc., from J. M. DeLucca, 5500 Kales Ave., Oakland, $181,526. Noted Dec. 6.

CONTRACTS AWARDED

N. Y., Brooklyn—E. Riegelmann, boro pres., Boro Hall, asphalt paving Carroll and Crown Sts., to Borough Asphalt Paving Co., 1301 Metropolitan Ave., $7,107 and $21,415 respectively. Ave. D, also paving and repaving Glenwood Rd. and 87th St., asphalt, to Brooklyn Alcatraz Asphalt Paving Co., 1301 Metropolitan Ave., $26,765, $34,051 and $9,508 respectively; asphalt paving 14th St., to Uvalde Asphalt Paving Co., 1 Bway., New York, $71,430, Wilson Ave., to Sicilian Asphalt Paving Co., 41 Park Row, New York, $32,813; grading, curbing and flagging Ave. D, to C. Bennett Contg. Co., 414 Rutland Rd., $18,621. Noted Nov. 29 and Dec. 13.

Pa., Waynesburg — Comrs. Greene Co. concrete paving 3,044 ft. road from Sycamore towards Ninervah, to Reed & Moore, Waynesburg, $41,640. Noted Dec. 20.

W. Va., Buckhannon—Upshur Co., grading and concrete paving 7.04 mi. Clarksburg Pike to Barbour County line, to Marshall & Gillooly, Elkins, $354,675. Noted Nov. 22.

North Carolina—State Hy. Comn., Raleigh, improving roads **(S. P. means State Project)** grading and concrete paving 7.32 mi. **S. P. 457-B**, Orange Co., to L. L. Tindall, Waterford, Wis., $230,338, 5.85 mi. **S. P. 852**, McDowell Co., to A. J. Wardrep, Holsten Bank Bldg., Knoxville, Tenn., $216,325; grading and sand asphalt paving 4.94 mi. **S. P. 571**, Moore Co., to Wesco Co., Chattanooga, Tenn., $81,679; grading, concrete paving and bridging 4.65 mi. **S. P. 666**, Richmond Co., to G. R. Martin & Co., Salisbury, $159,138; grading and asphaltic paving 13.12 mi. **S. P. 275**, Sampson Co., to Highway Eng. & Contg. Co., Selbyville, Del., $266,038, 2.01 mi. **S. P. 557**, Montgomery Co., to W. F. Bowe, Jr., 541 Broad St., Augusta, Ga., $63,187; grading 13.4 mi. **S. P. 791-A**, Yadkin Co., to W. E. Graham, Mt. Ulla, $76,288, 5.03 mi. **S. P. 648-A**, Lincoln Co., to G. Ginn, Inc., Gastonia, $27,580; grading and topsoiling 16.34 mi. **S. P. 513**, Caswell Co., to N. L. Teer, Durham, $115,618; grading 9.88 mi. **S. P. 646-A**, Lincoln Co. and grading and topsoiling 6.83 mi. **S. P. 750-B**, Stokes Co., to J. F. Mulligan Constr. Co., North Wilkesboro, $32,416 and $111,141 respectively. Noted Dec. 13.

N. C., Raleigh — Paving various streets asphalt on concrete base, curbing, guttering, storm sewers, etc., to R. G. Lassiter & Co., Citizens Bank Bldg., $425,000. Noted Nov. 15.

Georgia—State Hy. Dept., East Point, surfacing sheet asphalt 2 mi. Albany-Americus Rd., Federal Aid Project 298, Daugherty Co., to Sam Finley Co., 212 West North Ave., Atlanta, Ga., $35,224; with macadam 2.66 mi. Blue Ridge-Copperhill Rd., Federal Aid Project 358, Fannin Co., to Nicholas Constr. Co., 1 La France, Atlanta, $64,572.

Ohio — Dept. Highways and Pub. Wks., Columbus, grading, bridging and paving 3 mi. Sects. "C and I" Chardon-Madison Rd., Geauga Co., concrete, to G. A. Stein, Niles, $49,309; 0.979 mi. Sect. "Caledonia" Marion-Galion Rd., Marion Co., bituminous macadam, asphalt and brick, also 0.0625 mi. Sect. "Caledonia" Marion-Galion Rd., Marion Co., brick, to W. K. Drake, Marion, $51,017 and $3,655 respectively; 4.095 mi. Sect. "W-Englewood" Part of "X" National Rd., Montgomery Co., Kentucky rock asphalt, to Losey Rd. Constr. Co., Kenton, $122,414; 0.457 mi. Sect. "D" Canton-Steubenville Rd., Stark Co., brick, to P. Christensen, 1355 Yale Ave., N. W., Canton, $23,085; 1.493 mi. Sects. "B-1 and B-2" Alliance-Minerva Rd., Stark Co., brick (use 80% old brick) to G. W. Hadley, Goldberg Bldg., Canton, $49,547; 0.984 mi. Sect. "I-1" Bucyrus-Upper Sandusky Rd., Wyandot Co., brick, to G. B. Walther, 425 Amer. Bank Bldg., Lima, $37,693. Noted Dec. 20.

Ohio—Dept. Highways and Pub. Wks., Columbus, grading, bridging and paving 2.554 mi. Sect. "B" Marietta-Athens Rd., Athens Co., rein.-con., to Mariner & Co., Athens, $85,738. Noted Dec. 20.

Indiana—State Hy. Comn., Indianapolis, improving roads **(F. A. means Federal Aid)** concrete paving 7.511 mi. Dixie Bee Rd., F. A. 35, Sect. A, and F. A. 64, Sullivan Co., to W. D. Hutchinson, Indianapolis, $150,665; 8.309 mi. Lafayette Pike, F. A. 40, Sect. B, to G. T. Miller, Lebanan, $162,245; 8.788 mi. Sect. A, Michigan Rd., Marion and Shelby Counties, and 8.705 mi. Sect. B, Shelby Co., F. A. 45, to Davis Constr. Co., Tipton, $171,008 and $187,981 respectively, engrs. est. $195,427 and $229,198 respectively; 6.128 mi. Bluff Rd., Sect. A, F. A. 63, Marion Co., to F. Cunningham, 2161 North Meridian St., Indianapolis, $135,536, engrs. est. $147,082; 6.678 mi. Bluff Rd., Sect. B, F. A. 63, to Morgan and Johnston Counities, to F. J. Tillman, 555 Cramer St., Milwaukee, Wis., $154,570, engrs. est. $180,479; 10.39 mi. Bluff Rd., Sect. C, Morgan Co., F. A. 63, to Dill Bros., Arcanum, O., $281,794, engrs. est. $319,706; 6.208 mi. Dixie Bee Line Rd., Sect. A, F. A. 65, Gibson Co., to Kerr & Murphy, Bloomington, $131,710, engrs. est. $137,297; 6.969 mi. Range Line Rd., Sect. A, F. A. 70, Miami Co., to Gluss Bros. & Co., Hamler, O., $135,205, engrs. est. $156,717; 7.847 mi. Range Line Rd., Sect. B, F. A. 70, Miami Co., to C. T. Cain, Bluffton, $169,631, engrs. est. $193,551; 6.299 mi. French-Lick Rd., Sect. G, F. A. 16, Dubois Co., to Foulks Constr. Co., 705 Ohio St., Terre Haute, $128,497, engrs. est. $147,770, gravel base course on 5.595 mi. Tell City-English Rd., Sect. D, F. A. 19, Perry Co., to Harshman & Jarrell, Frankfort, $54,383, engrs. est. $59,043; grading 3.484 mi. Sect. A, Salem-Palmyra Rd., F. A. 23, Washington Co., and 4.204 mi. Sect. D, Salem-Palmyra Rd., F. A. 23, Washington Co., to Maggard & Maggard, Austin, $19,636 and $36,722 respectively, engrs. est. $25,045 and $46,226 respectively. Noted Dec. 6.

Ind., Wabash—Wabash Co., paving Lee A. Carr Rd., 17,328 sq.yd. asphalt on concrete, to Citizens Paving Co., Kokomo, $55,435. Engrs. est. $62,000. Noted Dec. 20.

Michigan — State Hy. Dept., Lansing, grading and surfacing 6.012 mi. Assess-

Streets and Roads (Continued)

ment Dist. Rd. 280, Tuscola and Huron Counties, 41,879 cu.yd. excav., 42,311 sq. yd. gravel, to J. Bright, Pigeon, $45,158. Noted Nov. 22.

Kan., Kansas City—Paving ¼ mi. Federal Aid Project 174, concrete, to Somers-Hall Constr. Co., Newton, $32,000.

Ark., Little Rock—Grading and surfacing 25,750 sq.yd. State St. from West 10th to West 20th Sts., warrenite on concrete, to M. D. L. Cook, Southern Trust Bldg., $85,528. Noted Nov. 22.

Tex., Austin—Tra is Co. grading 5.57 mi. State Highway 2, 24 ft., to Evans & Greathouse, c/o J. A. Greathouse, 1706 West 6th St., $11,112; drainage structures on same, to R. G. Buckner & Sons, Gonzales, $13,255. Engrs. est. $26,804. Noted Dec. 20.

Tex., Ennis—Paving 57 blocks Dallas and various other streets, Warrenite bitulithic, to Central Bituminous Co., Praetorian Bldg., Dallas, $3 per sq.yd.

Tex., Vernon—Wilbarger Co. rein.-con. surfacing 38,255 sq.yd. State Highway 5, etc., to J. P. Soty, Vernon, $105,508. Noted Dec. 13.

Tex., Wichita Falls—Wichita Co. grading and surfacing with conglomerate gravel and asphalt topping 5 mi. Electra-North Rd., 16 ft., to J. E. Ward & Co., 714 Linz Bldg., Dallas, $74,000. Engrs. est. $75,000.

Okla., Marlow—Grading and paving 14 blocks Bway. and Main Sts., 13,900 sq.yd. concrete, 11,260 lin.ft. curbing, 5,000 cu.yd. earth, excav., s etc., to Stephens Constr. Co., Marlow $60,001. Noted Dec. 13.

Idaho—Dept. Pub Wks., Div. Highways, Boise, grading and surfacing 8.56 mi. Coeur d'Alene-Yellowstone Trail between Kellogg and Wallace, Shoshone Co., Federal Aid Project 73-A, to Shoshone Co., Wallace, 24,739 cu.yd. solid rock excav. $1.60, 29,494 cu.yd. earth excav. $0.37, 15,897 cu.yd. surfacing $1.50, etc., total $81,260; to H. H. Boomer, Ziegler Bldg., Spokane, Wash., 31,014 cu.yd. channel change $0.40, 143,003 station yards overhaul $0.04, etc., total $20,746.

Calif., Colton — Improving C and South 8th Sts., to Hall-Johnson Co., P. O. Box 51, Lynwood, 191,000 sq.ft. 2 in. course Willite pavement $0.224, 1,752 ft. curb $0.56, 1,450 sq.ft. walks $0.18; and 84,500 sq.ft. 4 in. Willite pavement $0.222, 3,630 ft. 5 in. Willite pavement $0.253, 1,500 sq.ft. walks $0.18, 1,398 lin.ft. curb $0.56. Noted Dec. 13.

Calif., Oroville — Butte Co. improving Route 17, Sect. A, Humboldt Rd., to M. C. Polk, Chico, $26,150 using commercial stone.

Industrial Works

PROPOSED WORK

Mass., Somerset—Montaup Electric Co. organized by officials of Fall River Electric Co., 85 North Main St., Fall River, Blackstone Valley Gas & Electric Co., 231 Main St., Pawtucket, R. I., and Edison Electric Illuminating Co., 42 Main St., Brockton, plans electric generating plant and transmission system, here. $7,500,000.

Mass., Worcester—Machine Shops—H. Mandell, 33 Derby St., having plans prepared by H. L. Meacham, 571 Main St., two 2 story, 60 x 125 ft., Foster St. $60,000.

N. Y., Binghamton—Warehouse—W. H. Yager Co., Water and Henry Sts., plans 5 story, 100 x 100 ft., Lewis St. Will mature in spring.

N. Y., Buffalo—Factory—Morrison Sheet Metal Wks., 26 East North St., having plans prepared by G. M. Wolfe, 1377 Main St., 2 story, 150 x 250 ft., rein.-con., brick and steel, St. Paul St. $190,000.

N. Y., Buffalo — Foundry — Kensington-Davis Corp., 144 Kensington Ave., having plans prepared 1 story, 140 x 300 ft., rein.-con., brick and steel, Kensington Ave. $140,000. Austin Co., 16112 Euclid Ave., Cleveland, O., engrs.

N. Y., Utica—Plant—Utica Gas & Electric Co., 222 Genesee St., having plans prepared by T. E. Murray Co., engrs., 55 Duane St., New York City, 250,000 hp. steam plant, to include two 33,000 hp. units, etc. Will mature in spring.

N. Y., Penn Yan—Factories—Finger Lakes Canning Co., Monell St., plans 2 story, 40 x 144 ft. and 2 story, 50 x 50 ft. factories. $60,000. Will mature in spring.

Pa., Phila.—Mill—Concordia Silk Mills, Allegheny and Bourdenot Sts., having plans prepared by E. A. Stopper, Fuller Bldg., 2 story and basement, 66 x 105 ft. rein.-con. and brick, plain foundation, Allegheny and Boudenot Aves. $100,000.

Virginia—Railway Buildings—See "Railways."

W. Va., Fairmont — Plant — Owens Bottling Co. plans addition. $40,000.

N. C., Asheville — Garage — Asheville Overland-Knight Co., Inc., having plans prepared by Smith & Carner Asheville, 4 story garage containing 100,000 sq.ft. floor space. $300,000.

N. C., Asheville—Plants—Sayles Finishing Plant, Inc., plans to construct cotton, silk finishing and bleaching plants, along Swannanoa River, near here. $2,000,000. H. Parker, secy.

N. C., Greenville—Gas Plant—City plans large gas plant. $100,000. Address E. E. Williams, c/o Municipal Water & Light Comn.

Fla., Sanford—Electric and Gas Plants—See "Waterworks."

La., New Orleans—Warehouse—Louisville & Nashville R.R., 229 St. Charles St., plans storage warehouse, $750,000.

Tenn., Columbia—Factory—Crissey Tire and Rubber Co., plans 2 story, 100 x 350 ft. factory. $150,000. R. W. Crissey, c/o owner, archt.

Tenn., Copperhill—Plant—Tennessee Electric Power Co., Chattanooga, having preliminary surveys made plant on Ocoee River, near here, to develop 15,000 hp.

Tenn., Knoxville — Foundry — Day-Evans Iron Wks., Inc., plans 1 story, 75 x 160 ft. $55,000.

Tenn., Martin—Warehouse—Stafford Milling Co. plans to rebuild cotton gin and warehouse recently destroyed by fire. $60,000.

Tenn., Nashville—Packing Plant—Nenhoff Packing Co., 1308 Adams St., plans 5 story, rein.-con. addition. $150,000.

Ky., Paducah—Foundry—Shelton Brothers Fdry. Co. plans 1 story foundry. $40,000.

O., Cleveland — Assembly — Ford Motor Co., c/o A. L. Schmitt, Highland Park, Detroit, Mich., plans 1 story, 300 x 1,000 ft., brick and steel, here. A. Kahn, Marquette Bldg., Detroit, Mich., archt.

O., Cleveland — Factory and Garage — Curtiss-Ambler Realty Co., The Arcade, having plans prepared by G. K. Ferrington Co., 4900 Euclid Ave., 1 story (ultimately 2 story 60 x 160 ft., brick and steel, ? Prospect Ave. $50,000. Auto Electrical Maintenance Co., 943 Chester Ave., lessee.

O., Cleveland—Garage—L. Duchon, 3045 Essex Rd., Cleveland Heights, having plans prepared by A. F. Janowitz, 811 Prospect Ave., 1 story, 60 x 170 ft., brick, Perkins Ave., here. $50,000.

O., Cleveland—Garage—I. Margolin, 2496 Derbyshire Rd., Cleveland Heights, plans 2 story, concrete, brick and steel, Chester Ave., here. $60,000. M. Weis, 617 Union Bldg., archt.

O., Cleveland—Garage and Commercial—C. F. Neuberger, c/o Statler Hotel, plans 1 and 4 story, brick, steel and concrete, on lot 60 x 190 ft., 1905 Prospect Ave. $100,000. A. F. Janowitz, 811 Prospect Ave., archt. and engr.

O., Cleveland—Plant and Office—E. H. Ferguson, c/o H. Laronge, 319 Williamson Bldg., plans 2 or 3 story, brick, steel and concrete, East 49th St. and Superior Ave. $100,000. Engineer and architect's name withheld.

O., Conneaut — Factory — Graham Clay Products Co., c/o B. J. Graham, pres., 627 Guardian Bldg., Cleveland, having preliminary plans prepared by H. K. Ferguson Co., 14900 Euclid Ave., Cleveland, 1 and 2 story, brick and steel, here. $100,000. Noted Oct. 18.

O., Dayton—Factory—Duro Pump & Mfg. Co., East Monument Ave., having plans prepared by Schenck & Williams, Mutual Home Bldg., 4 story and basement, 80 x 200 ft., rein.-con. and brick, plain foundation, Amelia St. $175,000.

Ind., Angola—Plant—Standard Body Co. plans addition to plant. $200,000.

Ind., Bedford—Mill—Interstate Cut Stone Co. plans 1 story, 125 x 450 ft., brick and steel. $600,000. Private plans.

Ind., Bloomington—Garage—N. Hill plans 2 story and basement, 70 x 132 ft., rein.-con. and brick. $50,000. J. L. Nichols, Bloomington, archt.

Ind., Hartford City—Factory—Overhead Door Co. plans 1 story factory. $40,000.

Mich., Marquette—Power Plant—Voted $275,000 bonds for 2 story, brick and steel power plant, plain foundation, also dam in Dead River. Orbison & Orbison, 812 College Ave., Appleton, Wis., engrs. Noted Sept. 20. Noted under "Dams" Oct. 25.

Wis., Clintonville—Garage—A. O. Haase having plans prepared 2 story, 30 x 50 ft. garage and repair shop, brick, rein.-con. and steel, plain foundation. $45,000. Private plans.

Wis., Kenosha — Garage — City having plans prepared by J. M. Albers, City Hall, 2 story, 50 x 90 ft. rein.-con., brick and steel garage and repair shop, plain foundation. $40,000.

Wis., Madison—Power House—Madison Gas & Electric Co., c/o J. St. John, mgr., 100 North Fairchild St., plans brick and steel addition to power house, will install 2 new boilers each 1,000 hp. and one 5,000 kw. turbine. Engineer not selected.

Wis., Milwaukee—Factory—Koehring Co., 31st and Concordia Sts., rejected bids 1 story, 122 x 360 ft., brick and steel factory, plain foundation. Will readvertise later. Van Ryn & De Gelleke, 114 Grand Ave., archts.

Wis., Shullsburg—Factory—Farmers Co-operative Co., R. F. D., plans 2 story, brick and tile factory, plain foundation. $40,000. Private plans.

Wis., Wausau—Factory—Wausau Parts Mfg. Co., c/o W. A. Schoefield, mgr., plans 2 story, 60 x 90 ft., brick and rein.-con. factory, plain foundation. $50,000. Engineer and architect not selected.

Minn., St. Paul—Warehouse and Storage—Central Supply Co., 1514 11th Ave. S., Minneapolis, had plans prepared by Toltz, King & Day, 1410 Pioneer Bldg., 3 story and basement, 100 x 100 ft., rein.-con. and brick, University Ave. and Griggs St. $125,000.

Mo., Nevada—Plant—Vernon Asphalt Co. plans plant. $75,000. Engineer and architect not selected.

Mo., St. Louis — Warehouse — Westinghouse Electric Mfg. Co., 717 South 12th St., plans 3 story, rein.-con and brick addition. $150,000.

Mo., Taskee Station—Plant, etc.—I. W. Rodgers and H. E. Springer, Poplar Bluff, having preliminary plans prepared concentrate mill and washer, power plant, etc., with trams to carry ore from building to building, here. $200,000. Private plans.

Ark., Dumas—Saw Mill—J. V. Stimson Hardwood Lumber Co., New South Memphis, having preliminary plans prepared concrete and timber mill, 50,000 ft. daily capacity. $50,000. Private plans.

Tex., Dallas—Wholesale—Crowdus Drug Co., Commerce St., having plans prepared by Whitson & Dale, Medical Arts Bldg., 5 story and basement, 125 x 213 ft., concrete and brick, Orange and McKinney Sts. $200,000.

Tex., Dallas—Warehouse and Office—Morton Investment Co., Jefferson Hotel, having plans prepared by Finn & Dunne, Magnolia Bldg., 2 story and basement, (with foundation to carry 5 story) brick and concrete, Jackson St. $85,000.

Tex., Ft. Worth—Factory—Parker Brown Co., 1302 Pacific Ave., plans addition to factory, Pacific Ave. $80,000.

Tex., Ft. Worth—Warehouse—Bergman Produce Co., 239 West 15th St., plans 200 x 200 ft. concrete and brick warehouse, Railroad Ave. $50,000. Engineer and architect not announced.

Okla., Tulsa—Laundry—Clipson Cleaning & Dyeing Co., 915 South Main St., plans 2 story and basement, 96 x 115 ft., rein.-con. and brick. $200,000. Private plans.

Ore., Portland—Warehouse—J. I. Case Threshing Machine Co., Miller Bldg., Racine, Wis., having plans prepared 4 story, 100 x 186 ft., rein.-con., plain foundation, East Clay, 1st and 2nd Sts., here. $150,000. Will take bids in spring. Private plans. Address W. G. Davis, pres.

Wash., Cle Elum—Sub Station—Puget Sound Power & Light Co., Stuart Bldg., Seattle, plans concrete substation, to cover area 200 ft. sq., 5,000 kw. capacity, here. $160,000.

California—Cold Storage—Natl. Ice & Cold Storage Co., Postal Telegraph Bldg., San Francisco, having plans prepared by Davis-Heller-Pearce Co., Delta Bldg., Stockton, six 2 story plants, rein.-con., in Vallejo, Hayward, Hollywood, Riverside, Tropico and another location to be determined. $30,000-$50,000 each.

Calif., Alhambra—Factory—Amer. Liquid Meter Co., 405 West Rose Rd., San Gabriel, interested in company recently organized which plans factory, first unit to exceed $75,000.

Calif., Emeryville—Garage—Cozzens-Ball, Inc., 48th St. and San Pablo Ave., Oakland, having plans prepared by F. Soderberg, 276

Industrial Works (Continued)
Perkins St., Oakland, 1 story, rein.-con., San Pablo Ave., here. $85,000.

Calif., Pasadena—Light and Power Plant—Plans election to vote on $250,000 bonds for extensions to municipal electric light and power plant, incl. new substation, power equipment, transmission lines, pumping plants, etc.

Calif., San Diego — Warehouse, etc. — Dohrmann Commercial Co., Geary and Stockton Sts., having preliminary plans prepared 4 story, fireproof, 7th and C Sts. To exceed $100,000.

Calif., San Francisco—Factory—J. D. and A. B. Spreckels Securities Co. (Western Sugar Refining Co.) 2 Pine St., had plans prepared concrete and steel factory, 23rd St. $200,000. Foundation work will be done by day labor. Steel to Pacific Rolling Mill Co., 17th and Mississippi Sts., $99.79 per ton.

Calif., San Francisco—Plumbing and Heating Shop—Lawson & Drucker, 450 Hayes St., plans 2 story, rein.-con., Tehama St. $40,000. Private plans.

Calif., San Francisco—Warehouse—L. R. Lurie, 315 Montgomery St., having plans prepared by O'Brien Bros., Inc., 315 Montgomery St., 1½ story, brick, south of Market Dist. $42,000.

Ont., Wiarton—Garage and Repair Shop—McCrabbs Garage plans to rebuild garage and repair shop recently destroyed by fire. $40,000.

N. B., St. Stephen—Paper Plant—Hollingsworth & Whitney Co., 185 Devonshire St., Boston, Mass., plans paper plant, machine shop, power unit, etc., brick, along St. Croix River, here. $300,000. Private plans.

B. C., Vancouver—J. Hanbury and associates, 4th Ave. and Granville St., plans central heating plant to utilize waste material from lumber mills in False Creek area and piping steam to city business area. $1,000,000. Engineer not selected.

BIDS DESIRED

N. Y., Canton—Poultry—Jan. 8, by R. C. Ellsworth, secy. St. Lawrence University, poultry buildings for New York State School of Agriculture. $55,000.

N. J., Camden—Machine Shop—Dec. 26, by E. F. McClintock, master carpenter, Pennsylvania Offices, Camden, 1 story, 86 x 150 ft., brick and steel, plain foundation, Clinton, here, for Pennsylvania R.R., Broad St. Station, Phila. $75,000. W. H. Cookman, Broad St. Station, Phila., archt.

Md., Baltimore—Substation—Dec. 27, by United Realty Co., Continental Trust Bldg., 1 story, 27 x 66 ft., concrete and brick, plain foundation, 313-15-17 North Payson St. $40,000. Private plans. G. Wannegal, asst. supt. power.

O., Cleveland—Garage—See "Buildings."

O., Lorain—Factory—J. Spang Baking Co., c/o J. Spang, 2701 Barber Ave., Cleveland, taking bids 2 story and basement, brick and steel, here. $50,000. E. Huberty, 8017 Whitethorn Ave., Cleveland, archt.

Ill., Chicago—Auto Service and Garage—D. S. Klafter, archt., 64 West Randolph St., receiving bids 1 story, 150 x 150 ft., fireproof, Lawrence and Ridgeway Aves., for A. Natlin, c/o architect. $75,000.

Ill., Chicago—Dye House—J. H. Klafter, archts., 127 North Dearborn St., receiving bids 1 and 2 story, 50 x 125 ft., fireproof, Wentworth and 4th Pl., for Almore Dye House Co., c/o archt. $40,000.

Ill., Chicago—Factory—L. E. Russell, archt., 25 North Dearborn St., receiving bids 4 story, 60 x 150 ft., fireproof, addition, for Chicago Pottery Co., 1924 Clybourn St., $150,000.

Ill., Peoria—Packing Plant—Feb. 1, by B. H. Stephens, archt., 37 West Van Buren St., Chicago, 3 story, 112 x 250 ft., brick and concrete, Water St., here, for McDonough Packing Co., Sawyer St. $200,000.

Wis., Kenosha—Factory—P. Pirsch & Co., Fairfield Ave., taking bids 1 story, 100 x 200 ft. concrete factory, plain foundation. $60,000. Private plans.

Calif., Los Angeles—See "Unclassified."

CONTRACTS AWARDED

Mass., Brockton—Substation, etc.—Edison Electric Illuminating Co., 42 Main St., 2 story substation, transformers and equipment at Dupont Circle; 4½ transmission line from here to East Bridgewater; also equipment, extensions and rearrangement of switching equipment at East Bridgewater Station, to Stone & Webster, Inc., 147 Milk St., Boston. Total $785,000.

R. I., Phillipsdale (Branch of Providence)—Factory—Amer. Electrical Wks., 1 story, 80 x 280 ft., steel, in Phillipsdale Dist., to Stone & Webster Inc., 147 Milk St., Boston. Engrs. est. $100,000.

R. I., Providence — Warehouse — Orrin Jones Co., 59 Central St., 6 story, 45 x 76 ft., brick and steel, Central St., to Central Eng. & Constr. Co., Main St., Pawtucket, $[illegible],000.

N. Y., Cranesville—Power House—Adirondack Power & Light Co., 511 State St., Schenectady, 1 story, 145 x 200 ft., brick and steel addition, plain foundation, here, to J. T. Turner & Sons, Schenectady, $275,000.

N. Y., Long Island City—Factory—Nedwell Building Corp., c/o Baker & Ludwig, archts. and engrs., 9 Jackson Ave., 6 story, 60 x 100 ft., rein.-con. brick and steel, plain foundation, Hoffman Blvd., to Pritz & Stone, Grand Central Terminal, New York. Archts. est. $180,000.

N. Y., Palmyra—Power Station—R. K. Fuller, comr. Canals & Waterways, Albany, power station at Lock 29, here. Contr. 193, to T. H. Ryan, Inc., 184 Cleveland Ave., Buffalo, $63,600. Noted Nov. 15.

Pa., Phila.—Factory—V. H. Smith & Co., 2nd and Green Sts., 5 story, 30 x 85 ft. rein.-con. and brick, plain foundation, Spring Garden and Phillip Sts., to E. Atkins, 249 South 24th St., $65,000.

Pa., Phila.—Garage—W. Golder, c/o L. B. Rothchild, 215 South Broad St., 1 story, 75 x 167 ft. brick and steel garage, plain foundation, 1019 Arch St., to Golder Constr. Co., 274 South 20th St., $40,000.

Pa., Phila.—Sales and Garage—R. J. Seltzer, 1423 Locust St. will build 1 story, 50 x 265 ft. brick and steel, plain foundation, 3427-3429 North Broad St., by day labor. $50,000.

Pa., Phila.—Tank Shop—General Electric Co., River Rd., Schenectady, N. Y., 1 story, 125 x 250 ft. brick and steel, plain foundation, 69th and Elmwood Aves., to White Constr. Co., 95 Madison Ave., New York City, $200,000.

Tenn., Nashville—Packing Plant—Neuhoff Packing Co., 1308 Adams St., 4 story and basement, 45 x 100 ft., brick and concrete addition, to Foster-Creighton Co., 4th and 1st Natl. Bank Bldg., approximately $150,000.

O., Cleveland—Garage and Commercial—Auto Electrical Maintenance Co., c/o H. E. Page, 943 Chester Ave., 1 story, 62 x 278 ft. brick and steel, 2332 Prospect Ave., to H. K. Ferguson Co., 4900 Euclid Ave. Archts. est. $75,000.

O., Dayton—Auto Repair Shop—See "Buildings."

O., Dayton—Sales, etc.—E. F. Kimmel, Ludlow Bldg., 3 story and basement, 66 x 130 ft., sales and auto repair shop, rein.-con. and brick, plain foundation, North Jefferson St., to I. F. Weber & Co., 809 Commercial Bldg., $100,000.

Mich., Detroit—Plant—Natl. Ice Co., 245 Congress St., 1 story, brick and steel plant, plain foundation, Sterritt Ave., to Pine & Munnecke, 103 Marquette Bldg., $40,000.

Ill., Chicago—Auto Service and Garage—J. J. Wright Motor Co., 353 East 55th St., 1 story, 105 x 180 ft., fireproof, near Princeton Ave. and 55th St., to R. S. Woods, 12 West 55th St., archts. est. $70,000.

Ill., Chicago—Auto Sales and Service—L. Bromberg, 1252 North Oakley Blvd., 1 story, 103 x 250 ft., fireproof, 3250-56 Milwaukee Ave., by day labor. $100,000. A. M. Ruttenberg, 64 West Randolph St., archt. Noted Sept. 13.

Ill., Chicago—Garage—W. E. Garage Co. c/o Halperin & Braun, archts., 19 South La Salle St., 2 story, 96 x 125 ft., fireproof, 1830-38 West Madison St., to H. Janisch & Co., 1813 Winona Ave. Archts. est. $90,000.

Wis., Madison — Garage, etc. — Madison Medical Assn., c/o R. S. Ingersoll, Lakeside St., will build 2 story, 45 x 100 ft. rein.-con., brick and steel garage, laundry and boiler house, plain foundation, by day labor. $50,000. F. Riley, Conklin Bldg., archt.

Wis., Madison—Mill—L. J. Schultz Co., 1326 West Washington Ave., 2 story, 41 x 72 ft., factory and mill, brick, plain foundation, Regent St., to G. Nelson, 1118 West Jackson St. Archts. est. $40,000.

Wis., Milwaukee—Warehouse—Meredith Bros. Co., 1043 Kinnickinnic Ave., will build 1 story, 40 x 142 ft., brick and timber, plain foundation, Washington St., by day labor. $45,000.

Kan., Topeka — Plant — Southwestern Serum Co., 21st and Mosley Sts., 1 story, 100 x 125 ft. and 2 story, 50 x 80 ft., rein.-con. and brick, East 21st St., to Clickmer Constr. Co., Hutchinson. Archts. est. $50,000.

Neb., Omaha—Laundry—Kimball Laundry Co., 3 story and basement, 15th and Jones Sts., to P. Kiewits Sons, 908 Omaha Natl. Bank Bldg., $150,000.

Mo., Moberly—Plant—Polar Wave Ice & Fuel Co., 3626 Olive St., 83 x 250 ft., rein.-con. and brick, 50 ft. high, to Bell Bros. Constr. Co., Moberly. Archts. est. $125,000. Noted Dec. 13.

Mo., St. Louis—Foundry—Warren Steel Casting Co., 3400 Maury Ave., 1 story, 60 x 200 ft. foundry, to E. Lund Constr. Co., Merchants-Laclede Bldg. Archts. est. $60,000. Noted Nov. 22.

Mo., St. Louis—Laundry—Cascade Wet Wash Co., Texas and Victor Sts., 1 and 2 story, 125 x 247 ft., rein.-con. and brick, Ohio Ave., to Fruin-Colnon Constr. Co., Merchants-Laclede Bldg. Archts. est. $75,000. Noted Mar. 1.

Mo., St. Louis—Plant—St. Louis Terra Cotta Co., 5811 Manchester Ave., will build 1 story, 63 x 145 ft., 80 x 160 ft., and 95 x 450 ft. plants, and 5 kilns, brick and sheet iron, Oleatha St., by day labor. $75,000. Private plans.

Ark., Forrest City—Hardware—Vaccaro-Drobmyer Co., will build 2 story and basement, 109 x 150 ft., by day labor under supervision of J. L. Gatling, archt., Madison Ave. Bldg., Memphis, Tenn. Noted Nov. 22.

Ark., Hot Springs—Garage—M. J. Henderson, c/o Arkansas Trust Co., 621 Central St., will build 3 story, 110 x 159 ft., brick, rein.-con. and steel garage, by day labor under supervision S. M. Frank, archt., Hot Springs. $50,000.

Tex., Ft. Worth—Factory—Parker Brown Mfg. Co., East Front and Oak Sts., brick and concrete factory, East Front St., to C. F. Hodge, Keene Bldg., $79,000.

Wash., Sumner—Power Station—Puget Sound Power & Light Co., 4th unit in White River hydro-electric plant, incl. 20,000 kva. generator, transformers, circuit breakers, 1,800 ft. steel penstock and addition to building, to Stone & Webster, Inc., 147 Milk St., Boston. $1,060,000.

Calif., Los Angeles—Garage—California Co., 626 South Spring St., 1 story, 110 x 135 ft., brick, Temple St. near Alvarado St., to Benet & Co., 416 Beverly Dr., Beverly Hills, percentage basis. Checker Taxi Cab Co., 846 Bway., lessee.

Calif., San Francisco—Warehouse—J. W. Bender Roofing Co., Monadnock Bldg., 1 story, rein.-con., Alabama and 19th Sts., to Lindgren-Swinerton Co., Standard Oil Bldg., $42,000.

Buildings

PROPOSED WORK

N. Y., Buffalo—Church—Bley & Lyman, archts., 250 Delaware Ave., take bids about Feb. 1, rein.-con., brick and stone, Main St., for St. Joseph Roman Catholic Church, 1238 Main St.

N. Y., Long Island City—Church—Church of St. Patrick, c/o R. J. Reilly, archt. and engr., 50 East 41st St., New York, having plans prepared brick, steel and stone, plain foundation, Academy St., here. $150,000.

N. Y., New York—Apartment—C. Kreymborg, archt. and engr., 2534 Marion Ave., making sketches brick, steel and stone, plain foundation, Grand Concourse. $350,000. Owner's name withheld.

N. Y., New York—Apartment—S. Liberman, c/o Springsteen & Goldhammer, archts. and engrs., 32 Union Sq., having plans prepared brick, steel and stone, plain foundation, 189th St. and Audubon Ave. $275,000.

N. Y., New York—Church and Hall—Roman Catholic Church of St. John Nepomak, c/o J. C. Van Pelt, archt. and engr., 126 East 59th St., having plans prepared, brick, steel and stone, plain foundation, 1st Ave. and 68th St. $400,000.

N. Y., New York—Turkish Bath—P. D. R. T. Constr. Corp., c/o Gronenberg & Leuchtag, archts. and engrs., 32 Union Sq., having plans prepared 8 story, 75 x 98 ft., brick, steel and stone, plain foundation, 121-123 West 46th St. $350,000.

N. Y., Webster—School—Voted $370,000 bonds school, South Ave. Will mature in spring. Noted Dec. 6.

N. J., Glen Ridge—School—Bd. Educ. had plans prepared by F. Goodwille, 56 West 45th St., New York City, brick, High St. $190,000.

Pa., Chestnut Hill (Phila. P. O.)—Dormitory—G. D. Weisener having plans prepared by H. Trumbauer, Land Title Bldg., Phila., 2 story, 40 x 75 ft. stone dormitory, and 1½ story, 60 x 420 ft. stable, at Erdenheim. $160,000.

Pa., Lancaster—School—School Bd., having plans prepared by C. E. Urban, Woolworth Bldg., 3 story and basement, 169 x

Buildings (Continued)

211 ft, brick, steel and stone, plain foundation. $400,000.

Pa., Merion (Phila. P. O.)—Apartment—Merion Apartment Co., c/o Smullen & Berry, 217 South Broad St., Phila., having plans prepared by T. B. Lippincott, 11 South 16th St., Phila., 3 story and basement, 40 x 290 ft. with 2 wings 40 x 75 ft. and 40 x 100 ft. brick, plain foundations, Idris Rd. $500,000.

Pa., Phila. — Wynnefield-Taylor, Pelham Court, Germantown, (Phila. P. O.), having plans prepared by T. B. Lippincott, 11 South 16th St., 7 story and basement, 48 x 128 ft., rein.-con., brick and steel, plain foundation, Lincoln Dr. and Emlen St. $450,000.

Pa., Wilkes-Barre—Bank—Heights Deposit Bank, East Market and Hancock Sts., having plans prepared 4 story, 40 x 100 ft. rein.-con. and steel, East Market St. $150,000. Architect not selected.

W. Va., Huntington—Court House—Cabell Co. rejected bids Nov. 26, 3 story, 65 x 107 ft. addition, rein.-con. $150,000. Will readvertise.

W. Va., Morgantown—High School—Jan. 22 to vote on $600,000 bonds for high school. W. S. John, secy. Bd. Educ. Noted Dec. 6.

W. Va., Welch—School—Big Creek Dist. Bd. Educ., plans 3 school buildings. $150,000.

N. C., Greensboro — Municipal — Sold $200,500 bonds new municipal building. P. C. Painter, city mgr.

N. C., Hickory—School—Sold $340,000 bonds new school.

Ala., Birmingham—Office—E. M. Elliott, 1214 Virginia Ave., plans 8 or 10 story, 100 x 150 ft., 5th Ave. and 23rd St. $500,000. Architect and engineer not selected.

Miss., Biloxi—School—Voted $100,000 additional bonds for 3 ward buildings. $100,000 previously available.

Tenn., Knoxville — Temple — Kerbela Shrine Temple plans to construct temple. $350,000. Engineer and architect not selected.

Tenn., Morristown—School—Bd. Educ. for Negroes, Methodist Episcopal Church, plans 3 industrial school buildings. $150,000.

Ky., Dawson Springs — Hospital — National Hospital of Church of Christ, plans 3 story hospital. $500,000. Engineer and architect not selected.

Ky., Louisville — Temple — Union Labor Temple Co., Inc., having plans prepared by Weakley & Hawes, C & S Bldg., 5 story, 75 x 200 ft., steel frame, Main St. $350,000.

O., Carey—Church—A. M. Fish, pastor, having plans prepared by Ogden & Gander, archts. and engrs., 17 Steuben St., Albany, N. Y., 1 story, 80 x 200 ft., stone and timber, plain foundation. $250,000.

O., Cleveland — Apartment Hotel — M. Goodman, c/o S. H. Kleiman Co., Natl. City Bldg., having plans prepared by N. Petti, Williamson Bldg., 4 story and basement, 88 x 150 ft., brick. East 20th St. $150,000.

O., Cleveland — Apartment — S. Koslen, 1077 East 97th St., having plans prepared by M. Weis, 617 Union Bldg., 3 story, brick, East 93rd St. $200,000.

O., Cleveland — Apartment — S. Koslen, 1077 East 97th St., having plans prepared by M. Weis, 617 Union Bldg., 4 story, brick, East 82nd St. $300,000.

O., Cleveland — Apartment — M. Morris, 1829 Grasmere Ave., having plans prepared by A. F. Janowitz, 811 Prospect Ave., 3 story and basement, 39 x 145 ft., brick and timber, East 77th St. south of Euclid Ave. $150,000.

O., Cleveland — Apartment — T and R Constr. Co., c/o J. Shafran, 12109 Union Ave., having plans prepared by M. Altschuld, 5116 Woodland Ave., 3 story, 37 x 157 ft., brick and timber, East 88th and East 90th Sts. $150,000.

O., Columbus — Medical Science — Bd. Trustees Ohio State University having plans prepared by J. N. Bradford, Ohio State University, 4 story and basement, 50 x 125 ft., rein.-con. and brick addition, campus. $200,000.

O., Garfield Heights (Bedford P. O.)—School—Bd. Educ., Turney Rd., having plans prepared by W. H. Nicklas, 1900 Euclid Ave., Cleveland, 2 story, brick, metal lumber and concrete addition. $190,000.

O., Wooster—Community—Wooster College plans college community building. $200,000.

Ind., Ft. Wayne—Temple—Mispah Temple, A. A. O. N. M. S., having revised plans prepared by G. Mahurin, Lincoln Life Bldg., 3 story and basement, 146 x 165 ft. $600,000. Noted Sept. 7.

Ind., Indianapolis — Bank and Office — Guardian Realty Co., Meyer-Kiser Bank, plans 4 story and basement, rein.-con. and brick, Indiana Ave. $150,000. Vonnegut, Bohn & Mueller, Indiana Trust Bldg., archts.

Ind., Indianapolis—Schools—Bd. School Trustees plans 2 story and basement, West Washington St., $500,000, Vonnegut, Bohn & Mueller, Indiana Trust Bldg., archts.; 2 story and basement high school, North Meridian St., $1,500,000, Kopf & Woolling, Indiana Pythian Bldg., archts.; 2 story and basement, colored high school, North West St., $500,000, Harrison & Turnock, Bd. of Trade Bldg., archts. All brick, steel and rein.-con. Noted Jan. 11.

Ind., South Bend—College—St. Marys College plans 3 story and basement, rein.-con. and brick. $150,000. M. Carroll, 614 Ridge Arcade, Kansas City, Mo., archt.

Mich., Highland Park (Detroit P. O.)—School—Bd. Educ. having plans prepared by Burrowes & Eurich, 2631 Woodward Ave., Detroit, 2 story and basement, 64 x 200 ft. rein.-con., brick, steel and stone addition to Ford School, 2nd and Midland Aves. $160,000.

Mich., Jackson—Hotel—General Organization Co. plans hotel, $1,000,000. Engineer and architect not selected.

Ill., Chicago—Apartment—C. J. Carey, 227 East Superior St., plans 6 story, 48 x 148 ft., fireproof, 117 East Walton St. $250,000. Fugard & Knapp, 219 East Superior St., archts.

Ill., Chicago—Apartment—S. & J. Handelsman, c/o Loewenberg & Loewenberg, archts., 111 West Monroe St., plans 3 story, 125 x 150 ft., fireproof, 1332-42 South Harding St. $200,000.

Ill., Chicago—Apartment—C. F. Henry, c/o R. F. France, archts., 155 North Clark St., plans 3 story and basement, 140 x 200 ft., fireproof, Malden and Sunnyside Aves. $600,000.

Ill., Chicago — Apartment — N. Kaplan, c/o Rawson & Eisenberg, archts., 5 North La Salle St., plans 3 story and basement, fireproof, Cottage Grove Ave. near 42nd St. $150,000.

Wis., Appleton — Hotel — Conway Hotel Co., Oneida St., having plans prepared by M. Tullgren & Sons, 425 East Water St., Milwaukee, 6 story and basement, 60 x 75 ft., brick and concrete addition, plain foundation. $150,000.

Wis., Bloomington—School—Joint Dist. 3 having plans prepared by E. Tough, East Mifflin St., Madison, 2 story and basement, 68 x 100 ft., brick, tile and concrete, plain foundation. $150,000.

Wis., Cross Plains—School—St. Francis Catholic Congregation, c/o E. J. Kersteny, pastor, having plans prepared by F. L. Kronenberg, Carroll Bldg., Madison, 2 story and basement, 73 x 110 ft., brick, rein.-con. and stone, plain foundation. $150,000.

Wis., Eau Claire—Exchange—Wisconsin Telephone Co., 418 Bway., Milwaukee, plans 3 story, brick and concrete, plain foundation, East Grand Ave., here. $150,000. Engineer and architect not selected.

Wis., Eau Claire — High School — Bd. Educ., c/o J. E. Barron, secy., plans 4 story, rein.-con., brick and steel, plain foundation. Election soon to vote on $200,000 bonds. Architect not selected.

Wis., Kenosha—Bank and Office—Merchants & Savings Bank, 252 Main St., having preliminary plans prepared by Lindl, Lesser & Schutte, 82 Wisconsin St., Milwaukee, 4 story and basement, 50 x 85 ft., brick and concrete, plain foundation. $200,000.

Wis., Madison—City Hall and Court House—City and Dane Co., c/o W. G. Woodward, chn., 17 West Main St., having plans prepared by Claude & Starck, Badger Annex, 4 story, rein.-con., brick and steel, plain foundation. $175,000.

Wis., Madison—School—Bd. Educ., 22 West Dayton St., having plans prepared by E. Tough, Washington Bldg., 2 story, 50 x 95 ft. rein.-con., brick and steel addition to Randolph School, plain foundation, Spooner Ave. $200,000.

Wis., Menasha—Church—First Congregational Society, c/o W. H. Miner, chn. building com., 330 Park St., plans 2 story, brick and tile, plain foundation. $150,000. Engineer and architect not selected.

Wis., Milwaukee—Apartments—J. Hunholz, 2310 Vliet St., plans three 8 story and basement, brick and concrete, plain foundations, Martin St. $350,000 each. Engineer and architect not selected.

Wis., Milwaukee — High School — Our Lady of Mercy Academy, 705 Natl. Ave., having plans prepared by Brust & Philipp, 405 Bway., 3 story and basement, concrete, brick and tile, plain foundation, 22nd and Mitchell Aves. $400,000.

Wis., Rhinelander—High School—School Bd. soon takes bids 3 story and basement, brick, tile and concrete, plain foundation. $445,000. Smith, Reynolds & Brandt, Dempsey Bldg., Manitowoc, archts.

Wis., Shorewood (Milwaukee P. O.) — School Dist. 4, c/o W. Siekert, clk., having plans prepared by Herbst & Kuenzli, 114 Grand Ave., 3 story and basement, brick, tile and concrete, plain foundation, Oakland Ave. $280,000.

Wis., Wausau—Hotel—Hotel Wisconsin Realty Co., 86 Michigan St., Milwaukee, having preliminary plans prepared by M. Tullgren & Sons, 425 East Water St., Milwaukee, 8 story and basement, brick and concrete, plain foundation, 3rd and Scott Sts. $800,000.

Wis., Wauwatosa—High School—Township and city election Jan. 4, to vote on $400,000 bonds 2 story and basement Union High School. Engineer and architect not selected.

Wis., West Bend—High School—School Dist. 1, having revised plans prepared by Foeller, Schober & Stephenson, Nicollet Bldg., Green Bay, 2 story and basement, brick, tile and concrete, plain foundation. $200,000.

Wis., Wyocena—Asylum—Columbia Co. c/o S. C. Cushman, supt., having plans prepared by Claude & Starck, Badger Annex, 2 story and basement, 50 x 166 ft., brick, rein.-con. and steel, plain foundation. $150,000.

Ia., Ames—School—State Bd. Educ., Des Moines, having plans prepared by Proudfoot, Bird & Rawson, archts., 810 Hubbell Bldg., Des Moines, 3 story and basement, rein.-con., brick and stone, at Iowa State College, here. $200,000. W. H. Gemmill, secy.

Minn., Minneapolis — Hotel — Calhoun Beach Holding Co., c/o H. S. Goldie, treas., 929 Plymouth Bldg., soon takes bids and opens same after Jan. 1, 6 story superstructure, 120 x 250 ft., with 3 wings, rein.-con., brick and tile, West Lake St. and Dean Blvd. $1,300,000. Former bids rejected, A. Rose, 1007 Builders Exchange, archt. Noted Aug. 2 under "Unclassified."

Minn., Wells—School—Bd. Educ. plans 2 story and basement, rein.-con., brick and tile. $150,000. L. M. Buscho, clk. Engineer and architect not announced.

Kan., Lawrence—Hotel—W. E. Simons, c/o Eldridge Hotel, having preliminary plans prepared by W. E. Hulse & Co., Stamey Hotel Bldg., Hutchison, 6 story and basement, 42 x 117 ft., rein.-con., brick and stone. $200,000.

S. D., Watertown—Court House—Codington Co. plans 3 story and basement, rein.-con., brick and stone. $300,000. Engineer and architect not announced.

Mo., St. Louis—Administration—Southwestern Bell Telephone Co., Bway. and Locust Sts., having preliminary plans prepared 20 story and basement, 109 x 229 ft., rein.-con., brick, steel and stone, Pine St. $3,500,000. Private plans.

Mo., St. Louis—Exchange—Southwestern Bell Telephone Co., Bway. and Locust St., having preliminary plans prepared 7 story and basement (equal in height to 11 story), 110 x 130 ft., rein.-con., brick, steel and stone, Chestnut St. $750,000. Private plans.

Tex., Austin—Schools—Voted $500,000 bonds for erection of new junior high school, ward school and additions to present schools. Engineer and architect not selected. Noted Nov. 15.

Tex., Cleburne—Hotel—R. A. Johnson, Jacksonville, plans 4 story, brick and concrete, James St. $150,000. Engineer and architect not announced.

Tex., Ft. Worth — Library — Texas Christian University takes bids early in 1924, for 2 or 3 story, concrete and brick, on campus. $150,000 E. M. Waite, pres. Engineer and architect not announced.

Tex., San Antonio—Auditorium—City receiving competitive sketches auditorium, rein.-con., brick, stone and marble, Romana and North St. Marys Sts. Additional $200,000 bonds voted, total cost $700,000. Noted Oct. 11.

Okla., Blackwell — Hall and Store — Masonic Lodge making preliminary plans 3 story, 100 x 140 ft., Main St., $175,000. Architect not selected.

Okla., Guthrie — High School — Voted $280,000 bonds 3 story, 165 x 180 ft., rein.-con. and brick, plain foundation, Noble St. Hawk & Parr, Magnolia Bldg., Oklahoma City, engrs.

Okla., Oklahoma City—Medical Arts and Bank—Medical Assn. & Security Natl. Bank, 109 North Bway., having plans prepared by Layton, Smith & Forsyth, 906 Baniff Bldg., 12 story and basement, 75 x 140 ft., rein.-con., brick and stone. $800,000.

Wash., Tacoma—Temple—Masonic Corp., c/o B. W. Colner, 516 Bankers Trust Bldg., had sketches prepared and takes bids early in spring, 10 story, 125 x 175 ft., rein.-con., Bway. and St. Helens St. $400,000. Engineer and architect not selected. Noted June 22.

Ore., Salem—High School—W. C. Knighton, archt., United States Bank Bldg., Portland, takes bids about March 21, 2 story.

Building (Continued)

90 x 120 ft., rein.-con., here, for Bd. Educ. $190,000.

Calif., Long Beach—Lodge and Commercial—Masonic Lodge having plans prepared by Davies & Baume, Long Beach, 4 story, 50 x 150 ft., brick, Pine Ave. $170,000.

Calif., Los Angeles—Apartment—R. V. New, c/o L. A. Smith, archt., Lily-Fletcher Bldg., having plans prepared 4 story and basement, brick, 11th St. near Lake St. $150,000.

Calif., Los Angeles — Apartment — R. Roland, having plans prepared by Walker & Eisen, Pacific Finance Bldg., 13 story and basement, 100 x 150 ft., rein.-con. and brick, Wilshire Blvd. and Ardmore Ave. $1,500,000.

Calif., Los Angeles—Memorial Hall—Los Angeles Co. plans approximately 5 story, steel and rein.-con. To exceed $300,000. Will be occupied by Amer. Legion.

Calif., Pacioma—Bank and Store—Suburban Estate Co., c/o B. Bloser, archt., Consolidated Realty Bldg., Los Angeles, having preliminary plans prepared 1 story, 160 x 163 ft., brick, Sherman Way.

Calif., San Diego—Schools—Election Jan. 15 to vote on $400,000 bonds for elementary schools and $850,000 for junior high school. W. Angier, secy. City Bd. Educ. Noted Aug. 23.

Calif., San Francisco—Apartment—S. L. Peiser, 130 Palm Ave., having prepared by Macdonald & Couchot, 234 Pine St., 5 story and basement, rein.-con., Jackson St. near Buchanan St. $150,000.

Calif., San Francisco—High Schools—City and San Francisco Co. having plans prepared by J. Reid, Jr., city archt., 1st Natl. Bank Bldg., for Durant High School, $150,000 or more, Park-Presidio High School, $150,000 or more, South End High School, $150,000 or more, Lowell High School, $150,000 or more.

Que., Montreal—Office—Chamber of Commerce, St. Gabriel St., plans 4 story, office, St. James and St. Gabriel Sts. $300,000.

Ont., Ottawa—School—Pub. School Bd. having plans prepared by W. C. Beattie, c/o Elgin St. School, for 2 story and basement, rein.-con. and brick, plain foundation, Warren Ave. $200,000.

BIDS DESIRED

N. Y., Bellaire (Jamaica P. O.)—School—Jan. 8, by Superintendent Bd. Educ, 500 Park Ave., New York, P. S. 109, brick, steel and stone, plain foundation, 92nd Ave. and 213th St., here. W. H. Gompert, Flatbush Ave. extension and Concord St., Brooklyn, archt. and engr.

N. Y., Brooklyn—School—Jan. 8, by Superintendent Bd. Educ., 500 Park Ave., New York, P. S. 201, brick, steel and stone, plain foundation, 12th Ave. and 80th St., here. W. H. Gompert, Flatbush Ave. extension and Concord St., archt. and engr. Noted Dec. 21, 1922.

N. Y., New York—Church—J. Gregory, archt. and engr., 49 West 45th St., taking bids and opens same about Jan. 5, brick and stone, plain foundation, University Ave., for Calvary Methodist Episcopal Church. $400,000. Noted Oct. 11.

N. Y., New York—School—Jan. 8, by Superintendent Bd. Educ., 500 Park Ave., P. S. 80, brick, steel and stone, plain foundation, East Mosholu Parkway. W. H. Gompert, Flatbush Ave. extension and Concord St., Brooklyn, archt. and engr.

Md., Baltimore—School—Jan. 9, by Bd. Awards, 3 story and basement, 111 x 211 ft., concrete and brick, plain foundation, Jackson Sq., Fairmont Ave. and Fayette St. $700,000. T. W. Pietsch, American Bldg., archt. H. Massart, 328 North Charles St., engr. H. G. Perring, superv. engr.

O., Cleveland—Apartment and Garage—L. Cahn, 10615 Grantwood Ave., taking bids two 3 story and basements, 47 x 190 ft. apartments, and 40 x 120 ft. garage brick, 735 East 105th St. $225,000.

O., Columbus—Hall—Feb. 4, by Richards, McCarty & Bulford, archts., 584 East Broad St., 5 story, 120 x 130 ft., brick and terra cotta, East State St., for Knights of Columbus, 6th and State Sts. $500,000.

O., East Cleveland (Cleveland, P. O.)—Apartment—M. Stein, 511 Schofield Bldg., Cleveland, taking bids 2 story and basement, 102 x 126 ft., brick, Page Ave., here. $160,000. A. F. Janowitz, 811 Prospect Ave., Cleveland, archt.

Ind., Hammond—Hospital—D. X. Murphy & Bro., archts., Louisville Trust Bldg., Louisville, Ky., taking bids and open same about Feb. 1. 4 story, 46 x 288 ft., rein.-con., for Franciscan Sisters of the Poor. $300,000. Noted Nov. 29.

Mich., Detroit—Mercantile—Dec. 28, by Smith, Hinchman & Grylls, archts., 800 Marquette Bldg., 15 story and basement, 100 x 244 ft. rein.-con., brick and steel, plain foundation, Gratiot Ave., for J. L. Hudson Co., Gratiot Ave. and Farmer St.

Mich., Flint—School—Dec. 28, by A. J. Wildanger, secy. School Bd., 2 story and basement, rein.-con., brick and steel, plain foundation, Padasena Ave. $300,000. Malcomson, Higginbotham & Palmer, 1219 Griswold St., Detroit, archts.

Ill., Chicago — Apartment — Dubin & Eisenberg, archts., 14 West Washington St., receiving bids 3 story and basement, 60 x 178 ft., fireproof, Greenview and Lunt Aves., for Rosen & Coine, c/o architects. $150,000.

Ill., Chicago—Apartment—W. C. Presto, archt., 111 West Washington St., receiving bids 3 story and basement, 84 x 125 ft., fireproof, Albany and Lawrence Sts. $150,000. Owners name withheld.

Wis., Madison—Chapel—Balch & Lippert, archts., Gay Bldg., taking new bids 4 story, 65 x 88 ft. rein.-con., brick and steel, plain foundation, for German Methodist Church. 110 South Congress St. $150,000. Former bids rejected. Noted Nov. 29.

Wis., Milwaukee — Apartments — Beach Realty Co., 53 Patton Bldg., taking bids two 4 story and basement, 50 x 130 ft., brick, tile and concrete, plain foundations, Irving Pl. $165,000 for both. Private plans.

Wis., Milwaukee—Bank and Office—Dick & Bauer, archts., 811 State St., taking bids on foundation and excavation work for 2 story, 30 x 65 ft. and 67 x 70 ft., brick and concrete, North Ave., for Northwestern Bank Bldg., c/o J. G. Reutermann, 114 Grand Ave. $150,000.

Wis., Milwaukee—Hotel—Leiser & Holst, archts., 105 Wells St., taking bids and opens same about Jan. 1, 3 story and basement, 77 x 145 ft., brick, tile and concrete, plain foundation, 6th and Grand Sts. $200,000. Owners name withheld.

Tex., Galveston—Laboratory—Jan. 14, by State Bd. Regents, Bd. Educ. Bldg., Austin, 3 story and basement, 84 x 144 ft., rein.-con., brick and stone, Ave. B and 9th St., here. $350,000. Herbert M. Green Co., 619 North Texas Bldg., Dallas, archts.

Calif., Long Beach—Club—J. Morgan, archt., Merchants Exch. Bldg., San Francisco, receiving bids 5 story and basement, rein.-con. building for Y. W. C. A., here. $400,000.

BIDS RECEIVED

N. J., Asyla (Grenloch P. O.)—Hospital—Camden Co. (Camden) Dec. 17, group of buildings, here, from T. M. Gibbs Constr. Co., 215 South Broad St., Phila., $1,149,018. Noted Nov. 29 under "Camden."

N. J., Camden—High School—C. Adams, archt., 2038 Spruce St., Phila., Pa., Dec. 17, Cramer Junior High School, 3 story and basement, 80 x 153 ft., rein.-con., brick and steel, plain foundation, 29th and Federal Sts., here, for Bd. Educ., from G. Bachmann, 19 North 30th St., $185,969. Noted Dec. 13.

Ind., Ft. Wayne—School—Bd. School Trustees, 2 story and basement, 162 x 170 ft., rein.-con. steel and brick, from N. Frantz, Silver Lake, $150,000. Archts. est. $200,000. Noted Nov. 29.

Wis., Racine — Memorial Auditorium — Memorial Hall Com., 1 and 2 story, 180 x 200 ft., brick and concrete, from A. Kappel, 526 Wisconsin St., $173,913.

CONTRACTS AWARDED

Mass., Boston—School—City, 2 story and basement, 50 x 120 ft. rein.-con. and brick, wood pile foundation, Bluehill Ave., to be known as "Roger Walcott School," to McDonald & Imhof, 164 Dudley St., $259,000. Noted Nov. 8.

Mass., Hyde Park (Boston P.O.)—Police Station—Pub. Wks. Dept., Boston, 2 story and basement, 79 x 140 ft., brick, granite and limestone, wood pile foundation, Hyde Park Ave., to Alco Contg. Co., Inc., 43 Tremont St., Boston, $181,916. Noted Nov. 22.

N. Y., Brooklyn — Apartment — Sayco Realty Co., c/o McCarthy & Kelly, archts. and engrs., 159 Remsen St., will build brick, steel and stone, plain foundation, Lincoln Rd., here, by day labor. $600,000.

N. Y., Brooklyn—High School—Bd. Educ., 500 Park Ave., New York, James Madison High School, brick, steel and stone, plain foundation, Bedford Ave. from Ave. P to Quentin Rd., here, to Turner Constr. Co., 242 Madison Ave., New York, $2,045,000. Noted Dec. 13.

N. Y., New York—Apartment—E. Brandt, c/o Springsteen & Goldhammer, archts., and engrs., 32 Union Sq., will build brick, steel and stone, plain foundation, 188th St. and Wadsworth Ave., by day labor. $200,000.

N. Y., New York—Apartment—I. Kraft, c/o Springsteen & Goldhammer, archts. and engrs., 32 Union Sq., will build brick, steel and stone, plain foundation, 189th St. and Amsterdam Ave., by day labor. $1,500,000.

N. Y., New York—Apartment—S. Williams, c/o G. G. Miller, archt. and engr., 1482 Bway., will build brick, steel and stone, plain foundation, 109th St. and 5th Ave., by day labor. $300,000.

N. Y., New York—School—Bd. Educ., 500 Park Ave., addition to P. S. 36, brick, steel and stone, Black Rock and Castle Hill Aves., Bronx Boro, to G. Colon & Co., 81 East 125th St., $347,000. Noted Dec. 13.

Pa., Phila.—Store—Heyman Bros., 215 South Broad St., 2 story and basement, 115 x 120 ft., steel, limestone and terra cotta, plain foundation, 1721-1729 Chestnut St., to J. Schnabel, Denckla Bldg., $200,000.

Tenn., Lebanon—Schools—City Bd. Educ., 2 buildings, 2 story and basement, brick and concrete, to Dunnavant Constr. Co., Nashville, Est. cost $150,000. Noted Dec. 13.

Ind., South Bend—Office—Tuttle Corp., 119 West Washington St., 8 story and basement, 56 x 122 ft., rein.-con., steel and brick, Colfax St., to Bedford Stone & Construction Co., Fletcher Savings & Trust Bldg. Archts. est. $700,000.

Ill., Chicago—Apartment—A. D. Schuler, 4634 North Kedzie Ave., 3 story and basement, 84 x 125 ft., rein.-con., brick and steel, fireproof, Sacramento and Lawrence Sts., to A. Haack, 1427 North Sawyer St. Archts. est. $150,000.

Ill., Oak Park—Apartment—M. P. Morrissey, 140 South Dearborn St., Chicago, apartment on Oak Park and Erie Sts., here, to Anderson & Winblad, 6235 South Michigan Ave., Chicago. Archts. est. $750,000.

Ia., Cedar Falls—Dormitory—State Bd. Educ., Des Moines, general contract 3 story and basement, rein.-con., brick, tile and stone addition to Iowa State Teachers College, here, to Tapager Constr. Co., Albert Lea, Minn., $120,167. Noted Dec. 20.

Mo., Kansas City—Medical Arts—Jackson Co. Medical Society, general contract 14 story and basement, rein.-con. and steel, 34th St. and Bway., to Reyburn Eng. & Constr. Co., 609 Waldheim Bldg.

Mo., St. Louis — Church — Washington-Compton Presbyterian Church, Washington and Compton Aves., 2 story, 128 x 128 ft., brick and stone, 5 North Skinker Rd., to Wimmer Constr. Co., Victoria Bldg. Archts. est. $150,000.

Ark., Ft. Worth—Convent—Scholastria Convent, 3 story and basement, 42 x 178 ft. and 43 x 52 ft., rein.-con., brick and stone, general contract to Majors & Scheer, Sapulpa, Okla. Est. cost $200,000.

Tex., Galveston—Schools—Bd. Educ. general contracts, Goliad School, to Standard Constr. Co., West Bldg., Houston, $182,000; Ball High School and additions to Sam Houston and David Crockett schools to Walsh & Burney, Calcasieu Bldg., San Antonio, total $327,612; plumbing, sewering and gas fitting combined jobs, to A. H. Schafer, 217 North St. Marys St., San Antonio, $37,454; heating and ventilating, combined jobs, to Kennison Bros., Dallas, $56,500. Noted Nov. 1.

Tex., Port Arthur — Temple — Masonic Lodge 3 story, rein.-con., brick and stone, to Hickey & Montgomery, 1402 Main St., Dallas, $168,900. Noted Nov. 1.

Wash., Tacoma — Hotel — Citizens Hotel Corp., 601 Tacoma Bldg., 10 Story, rein.-con., 9th and Bway., to Pratt & Watson, P. S. Bank Bldg., $1,195,559.

Calif., San Francisco—Exchange—Pacific Telephone and Telegraph Co., 333 Grant Ave., 3 story and basement, Class A construction, Bush and Larkin Sts., to Monson Bros., 251 Kearney St., $225,000. Noted Dec. 6.

Ore., Portland—School—School Dist. 1, general contract 2 story, 100 x 310 ft., rein.-con., plain foundation, East 51st and Belmont Sts., to Hanson, Hammond & Clist, Portland, $161,913. Noted Oct. 25.

Calif., Los Angeles — Market — Youngs Market Co., 3 story and basement, 140 x 150 ft., rein.-con., 7th St. and Union Ave., to Weymouth Crowell Co., 2026 West 9th St., $400,000.

Calif., Los Angeles—Market and Loft—Youngs Market Inc., 216 South Spring St., 3 story and basement, rein.-con. and brick 7th and Union Aves., to Weymouth-Crowell Co., 2026 West 9th St., $350,000.

Federal Government Work

PROPOSED WORK

W. Va., Huntington—Quarterboat—U. S. Engineer rejected bids one 5 x 26 x 80 ft. steel quarterboat. Noted Nov. 8.

Ala., Florence—Cranes—U. S. Engineer, Florence, plans to purchase two 15? ton cranes for Wilson Dam.

Ky., Owensboro—Castings—U. S. Engineer, P. O. Box 72, Louisville, plans to purchase 44 tons c.i. castings for lock valves at Dam 46, Ohio River, here.

Federal Government Work (Continued)

Ind., Leavenworth—Cement—U. S. Engineer, P. O. Box 72, Louisville, Ky., plans to purchase 10,000 bbls. cement for Dam 44, Ohio River, here.

BIDS DESIRED

Pa., State College—Post Office—Jan 21 by Treas. Dept., Wash., D. C., construction, complete incl. mechanical equipment, U. S. Post Office, here; adv. E. N.-R. Dec. 27.

Va., Norfolk—Remodeling—Spec. 4912—Jan. 9, by Bureau Yards & Docks, Navy Dept., Wash., D. C., remodeling officers quarters at Marine Corps Base, here. Noted Oct. 4.

O., Cincinnati—Gates—Jan. 19 at office U. S. Engineer, furnishing and erecting gates for Lock 34, Ohio River; adv. E. N.-R. Dec. 27.

BIDS RECEIVED

D. C., Wash.—Bungalows—Dept. of Interior, construction complete, 7 bungalows at St. Elizabeth's Hospital, (1) work complete, from G. G. Loehler Co., Franklin Bank Bldg., 10th and Pennsylvania Ave., (1) $71,600 (2) $60,800; C. Colonna, P. O. Box 154, Hampton, Va., (1) $72,050 (2) $58,664. Noted Nov. 22.

CONTRACTS AWARDED

Ala., Florence—Cement—U. S. Engineer, Florence, furnishing 115,000 bbls. cement for use at Wilson Dam as follows: to Atlas Portland Cement Co., B-M Bldg., Birmingham, 63,334 bbls. f.o.b. Leeds, $2.25; to Signal Mountain Portland Cement Co., James Bldg., Chattanooga, Tenn., 20,000 bbl. f.o.b. Chattanooga, $2.11; to Lehigh Portland Cement Co., Birmingham, $1,666 bbl. f.o.b. Boyles, $2.25. Noted Nov. 29.

La., New Orleans—Steel Hull—U. S. Engineer, 1 steel hull for derrick-boat, to Jahncke Dry Dock, Inc., New Orleans, $18,690.

Ky., Owensboro—Lumber—U. S. Engineer, P. O. Box 72, Louisville, furnishing lumber for Dam 46, f.o.b. here, as follows: Lot (1) 125,000 ft. No. 1 yellow pine s.i.s.-i.e., to Daly Lumber Co., 905 Andrews Bldg., Cincinnati, O., $34 per M; Lot (2) 24,000 ft. No. 1 yellow pine rough, to Great Southern Lumber Co., Todd Bldg., Louisville, $35; Lot (3) 52,000 ft. Deuse merchantable yellow pine s4s, to Nicola, Stone & Myers Co., Hattiesburg, Miss., $44.30.

Wash., Puget Sound—Dredging—Spec. 4708—Bureau Yards & Docks, Navy Dept., Wash., D. C., dredging approximately 68,000 cu.yd. place measurement, Navy Yard, here, to Puget Sound Bridge and Dredging Co., Central Bldg., Seattle, $48,750. Noted Nov. 1.

Unclassified

PROPOSED WORK

Trestle, etc.—East Boston (Boston P. O.), **Mass.**—Boston Sand & Gravel Co., 88 Broad St., Boston, plans timber trestle, 250 ft. long, supporting traveling crane and belt conveyor with coal hoist mounted at one end. Cost incl. equipment. $40,000-$50,000. Private plans.

Transmission System—Somerset, Mass.—See "Industrial Works."

Park and Fish Hatchery — Burlington, Conn.—State Dept. of Fish & Game, Hartford, plans large park and fish hatchery, here.

Lighting Standards, etc.—Louisville, Ky.—Bd. Park Comrs. plan 75 lighting standards, etc. on Western Parkway. $25,000. A. A. Kreiger, city engr.

"White Way"—Louisville, Ky.—Bd. Pub. Wks. plans "White Way" system on 6th and 7th Aves. $25,000. A. A. Krieger, city engr.

Coaling Station — Russell, Ky. — Chesapeake & Ohio R.R. Co., 823 East Main St., plans 800 ton rein.-con. coaling station, here. $40,000. H. Frazier, ch. engr.

Power Development—Logansport, Ind.—J. A. Shafer, 1008 Odd Fellows Bldg., plans power development, incl. dam, on Wabash River, 6 mi. below here. To exceed $25,000.

Retaining Wall — Chicago, Ill. — South Park Comrs., 57th St. and Cottage Grove Ave., retaining wall along approaches to 23rd St. viaduct, to B-W Constr. Co., 720 Cass St., $42,850. Noted Nov. 22.

Street Lighting—Cuba City, Wis.—Having plans prepared ornamental street lighting system, concrete posts, cable, etc., $25,-000. J. A. Clark, 15 North 4th St., Minneapolis, Minn., engr. Noted Nov. 8.

Grain Elevator—Milwaukee, Wis.—I. C. Lyman, 93 Michigan St., plans to rebuild brick and concrete grain elevator, plain foundation, recently destroyed by fire. $100,000. Engineer and architect not selected.

Gas Distribution System — Coffeyville, Kan.—Plans election to vote on $500,000 bonds for gas production and distribution system. T. R. Marshall, city engr.

Lighting System—St. Joseph, Mo.—Election in January to vote on $500,000 bonds electric lighting system. W. K. Seitz, city engr. Noted Sept. 20.

Dock—South St. Louis (St. Louis P. O.) **Mo.**—Natl. Lead Co., International Life Bldg., St. Louis, plans terminal dock on Mississippi River, at Canary Plant, here. To exceed $25,000.

Rock Crushing Plant—Colusa, Calif.—Colusa Sand and Rock Co., having plans prepared gravel and rock crushing plant, incl. spur tracks. Will install rock crusher, compressors, storage bins, motors, transformers and will probably be in market for dragline excavator.

Golf Course — Pasadena, Calif. — City plans election to vote on $125,000 bonds for golf course.

Transmission Lines, etc.—Pasadena, Calif.—See "Industrial Works."

Ornamental Lighting System—San Fernando, Calif.—See "Streets and Roads."

Transmission Line — Quebec — Electric Service Corp., Power Bldg., Montreal, plans 4,400 volt transmission line in municipalities of St. Felix de Valois and St. Jean de Matha, distance of 7 miles.

BIDS DESIRED

Dike, etc.—Los Angeles, Calif.—Petroleum Export Co., 423 Pacific Electric Bldg., receiving bids 850 ft. rein.-con. dike, 8 ft. high; one 50 x 100 ft. and one 50 x 75 ft. steel and corrugated iron warehouses, etc.

Wharf — Pembroke, Ont. — Jan. 9, by Dept. Pub. Wks., Ottawa, reconstructing concrete bulkhead 689 ft. long, 100 ft. return wall, gravel fill, wharf slips, dredging basin and channel 70,000 cu.yd. sand, muck and clay, gravel road, moving existing warehouse, and old pilework wharf approach 1,120 ft. long. $100,000. K. M. Cameron, engr.

BIDS RECEIVED

Transmission Line, etc.—Brockton, Mass.—See "Industrial Works."

Heating and Ventilating Apparatus — Brooklyn, N. Y.—Bd. Educ., 500 Park Ave., New York, Dec. 19, heating and ventilating apparatus, in P. S. 99, East 9th St. between Aves. K and L, here, from Gillis & Geoghegan, 537 West Bway., New York, $44,229; in P. S. 142, Rapelyea St., here, from D. J. Rice, 405 Lexington Ave., New York, $46,970. Noted Dec. 20.

Heating and Ventilating Apparatus — New York, N. Y.—Bd. Educ., 500 Park Ave., Dec. 19, heating and ventilating apparatus in P. S. 60, 12th St. and Ave. A, from Raisler Heating Co., 129 Amsterdam Ave., $98,765. Noted Dec. 20.

Pavilions—New York, N. Y.—Bellevue & Allied Hospital, 415 East 26th St., Dec. 20, general contract pavilions F and G of new Bellevue Hospital, from George A. Fuller Co., 949 Bway., $2,940,700; heating work, from T. F. Hall, Inc., 405 Lexington Ave., $260,716; plumbing, from T. E. O'Brien, Inc., 6311 5th Ave., Brooklyn, $448,000. Noted Nov. 29.

CONTRACTS AWARDED

Car Sheds—Wichita Falls, Tex.—Wichita Tract, concrete and brick car sheds, to C. M. Balkowski, Morgan Bldg., $40,000.

Tunnel — Niagara Falls, Ont. — Queen Victoria Park Comn., extending scenic tunnel under Horse Shoe Falls, here, to J. H. McKnight Co., 88 St. David St., Toronto, $36,000, also 2 concrete bridges at Dufferin Islands, to R. H. H. Blackwell, 86 Clinton Ave., Toronto, $21,000.

Materials and Equipment

PROPOSED WORK

Tractor—Utica, N. Y.—Park Bd. plans to purchase tractor caterpillar type. $5,000.

Road Machinery—Wisconsin—Following are county appropriations for road machinery during 1924. Sawyer Co., $4,000 incl. 3 light trucks, patrol graders, etc., E. J. Collett, Hayward, comr.; Outagamie Co. $20,-000 incl. larger grader, small tools, etc., A. G. Brusewitz, Appleton, comr.; Waukesha Co. $27,500 incl. tractor and crushing outfit, C. J. Hahn, Waukesha, comr.; Ashland Co. $10,000, incl. 3 patrol graders, one 12 ft. blade with back sloper and ditcher.

Road Machinery—Arcadia, Fla.—De Sota Co. election Jan. 7, to vote on $10,000 bonds for road building machinery.

Structural Steel — Chicago, Ill. — Illinois Central R. R., 135 East 11th Pl., plans to purchase 350 tons structural steel for bridges. F. L. Thompson, ch. engr.

Road Machinery — Hudson, Wis. — St. Croix Co. appropriated $10,000 for road machinery, incl. patrol graders. J. Caffrey, Hammond, comr.

Road Machinery — Manitowoc, Wis. — Manitowoc Co. takes bids about Feb. 1, 2 motor trucks, 1 patrol tractor, 3 patrol graders, 1 heavy grader and 5 wheel scrapers. $25,000. J. Connell, highway comr.

Dragline Excavator—Colusa, Calif.—See "Unclassified."

BIDS DESIRED

Pipe, etc.—Phila. Pa.—Dec. 31, by T. F. Armstrong, purch. agt., 312 City Hall, furnishing lengths c.i. pipe, Class 112, 50,000 lbs. pig lead, Class 111, fire hydrants, Class 113, all foregoing for Water Bureau, 175,000 gal. fuel oil, Class 115, 6,500 cu.yd. asphalt, 2,500 tons crushed slag, 2,500 tons binder stone, Class 116, etc., for Bureau of Highways.

Dredge — Savannah, Ga. — Jan. 10, by Comrs. Chatham Co. and ex-officio judges, furnishing land dredge.

Tractor, etc.—Pass Christian, Miss.—Dec. 31, by Bd. Supervs. Harrison Co., Court-House, one crawler type factor and one 7 ft. grader with needed attachments.

Gravel—Abbeville, La.—Jan. 2, by J. E. Broussard, pres. Police Jury Vermillion Parish, 13,000 cu.yd. washed gravel and 5,000 cu.yd. sand clay gravel, 40% metal retained on ¾ in. sieve.

Tractor and Shovel—Granite City, Ill.—F. J. Lewis Mfg. Co. in market for caterpillar tractor and shovel, complete outfit.

Cement—Wisconsin—Jan. 3, by State Hy. Comn., at Capitol Annex, Madison, 1,023,000 bbl. Portland cement for delivery during 1924. A. R. Hirst, state highway engr.

Clam Loader—Pittsburg, Kan.—Du Bois Constr. Co., in market for clam loader for handling cement, sand and crushed rock.

Crushed Stone—Houston, Tex.—Jan. 7, by Comrs. Court Harris Co., 10,000 tons crushed stone, 10,000 tons gravel, 5,000 cu. yd. shell for highway construction and repairs. $50,000. Howe & Wise, co. engrs.

Crushing plant, etc.—Salado, Tex.—L. Harrington & Co., engrs., Houston Bldg., San Antonio, receiving bids and opens same about Jan. 1, equipment for new crushing plant, incl. 75 hp. pumper, screens and bins, 300 yd. sand washer, 75-100 hp. boiler, bucket line probably 2 yd. size, hoisting engine and appurtenances, for Salado Gravel Co., Salado. Noted Dec. 20 under "Industrial Works."

Paving Mixe —Okmulgee, Okla.—J. E. Parks (contractor) receiving bids large steam concrete paving mixer.

BIDS RECEIVED

Pipe—Montreal, Que.—Furnishing 207 tons 20 in. and 71.5 tons 16 in. pipe for spring delivery and 535 tons 20 in., 256.1 tons 16 in. and 568.75 tons 30 in. pipe for winter delivery, from Kennedy & Co., 288 Beaver Hall Hill, $46.50 per ton.

CONTRACTS AWARDED

Inorganic Dust, etc.—Brooklyn, N. Y.—E. Riegelmann, boro pres., Boro Hall, 1,200 tons inorganic dust, to Limestone Products Corp. of America, 17 West 42nd St., New York, $6,420; 6,000 cu.yd. asphalt sand, to T. E. McCormick, 810 Lincoln Rd. Flatbush, $7,800; 2,500 cu.yd. gravel or broken stone, to Rosoff Sand & Gravel Corp., 152 West 42nd St., New York, $6,125. Noted Nov. 29.

Lumber—Atlantic, Ia.—Cass Co., furnishing 300,000 ft. bridge lumber and 17,000 ft. red cedar to Standard Bridge Co., City National Bank Bldg., Omaha, Neb., $27.22. Noted Nov. 22.

Lumber—Marengo, Ia.—Iowa Co., 240,-000 ft. bridge lumber, to Wheeler Lumber St., Des Moines, $37. Noted Nov. 29. Bridge and Supply Co., 200 Southwest 9th

Steel Bars, etc.—Mason City, Ia.—Cerro Gordo Co., 15 tons ⅞ in. round steel reinforcing bars and 3,024 ft. 12 in. corrugated metal culvert to Ft. Dodge Culvert and Steel Co., Ft. Dodge, $3.115 per cwt. Noted Nov. 29.

Plank and Piling—Onawa, Ia.—Monona Co., 5 cars full sawn fir bridge plank and 1 car cedar piling to Blencoe Farmers Elevator Co., Blencoe, plank $39.50, piling $41.50. Noted Nov. 29.

Bridge Material—Vinton, Ia.—Benton Co., 120,000 ft. No. 1 rough fir bridge lumber, to W. W. Saylor, Waverly, $39.

Crushed Rock, Gravel, etc. — Portland, Ore.—Furnishing crushed rock gravel, etc., (1) at contractors' bunkers (2) delivered at city paving plant to City Motor Trucking Co., 291 Hawthorne Ave., (1) 500 cu.yd. 3 in. and 500 cu.yd. 1 in. crushed rock $1.80, 100 cu.yd. 2 in. crushed gravel $1, 200 cu.yd. rock screenings $2, 200 cu.yd. concrete sand and 200 cu.yd. masons sand $1; (2) 500 cu.yd. 3 in. and 5,860 cu.yd. 1 in. crushed rock $1.75, 900 cu.yd. crushed gravel $1, 2,980 cu.yd. rock screenings $1.90, 800 cu.yd. concrete sand $0.90 and 7,780 cu.yd. masons sand $0.95.

Steel Pipe—San Bernardino, Calif.—Furnishing 6,000 lin.ft. 4 in. and 5,000 lin.ft. 3 in. wrought steel pipe to Mark-Lally Co., 2nd and Clementina Sts., San Francisco, $51 and $31.10 respectively.

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Engineering News-Record

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A Banner Construction Year in Prospect

WITH the end of the present year at hand, the thoughts of engineers and contractors turn to 1924. What is the prospect for construction during the next twelve months?

The answer, according to the forecast of *Engineering News-Record's* Construction News Department is:

$5,000,000,000

This sum, if costs remain at their present level, will be spent on building and general construction in the United States during 1924, according to the best estimates now available. In other words, if no unforeseen events occur to upset calculations, a banner construction year is in sight.

Assuming that this huge sum will be expended on various classes of work in the same ratio as obtained during 1923, the figures are as follows:

The Construction Prospect for 1924

Streets and roads	$1,250,000,000
Industrial building	350,000,000
Commercial building	1,350,000,000
Residential building	550,000,000
General construction	1,500,000,000
Total	$5,000,000,000

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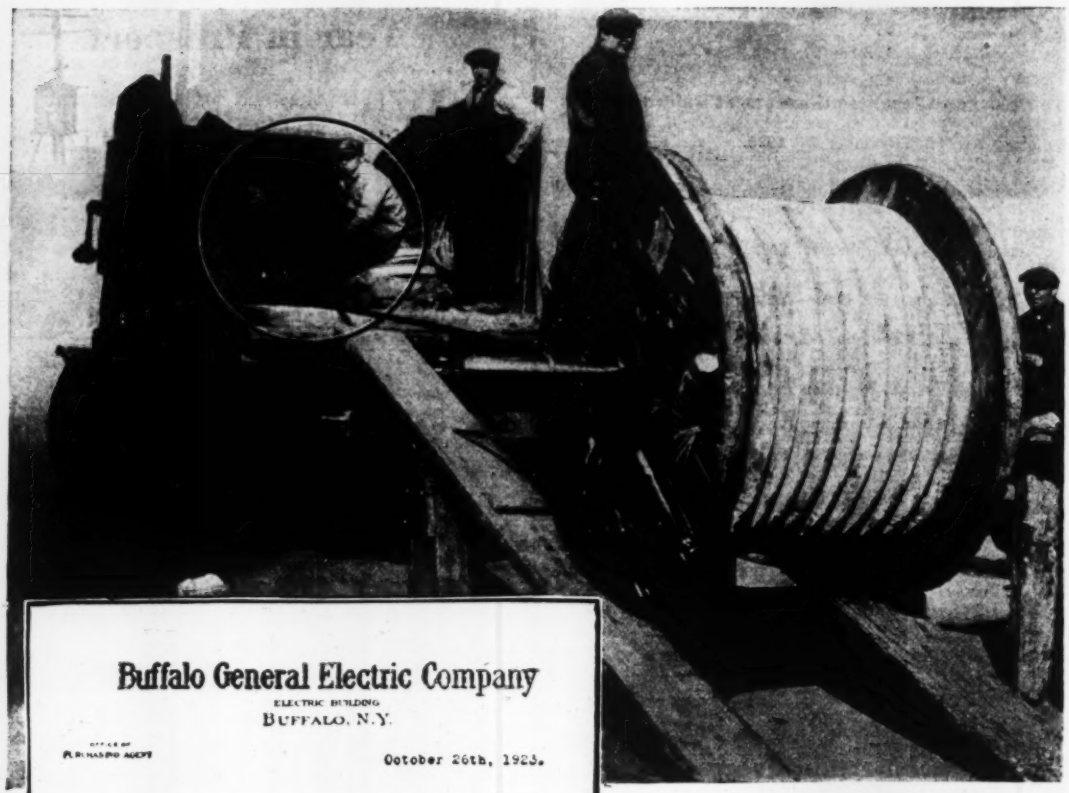
MEAD-MORRISON

VERTICAL CAPSTAN WINCH



Buffalo General Electric Company
ELECTRIC BUILDING
BUFFALO, N.Y.

OFFICE OF
PURCHASING AGENT

October 26th, 1923.

TRUCK EQUIPMENT CO.,
1016 Lafayette Ave.,
Buffalo, N. Y.

Gentlemen:

We have the most of our large trucks equipped with Mead-Morrison #901 heavy duty winches and they have been very satisfactory in handling our class of work, and we intend to make it one of our standard equipment.

Yours very truly,

BUFFALO GENERAL ELECTRIC COMPANY.

EJA:S

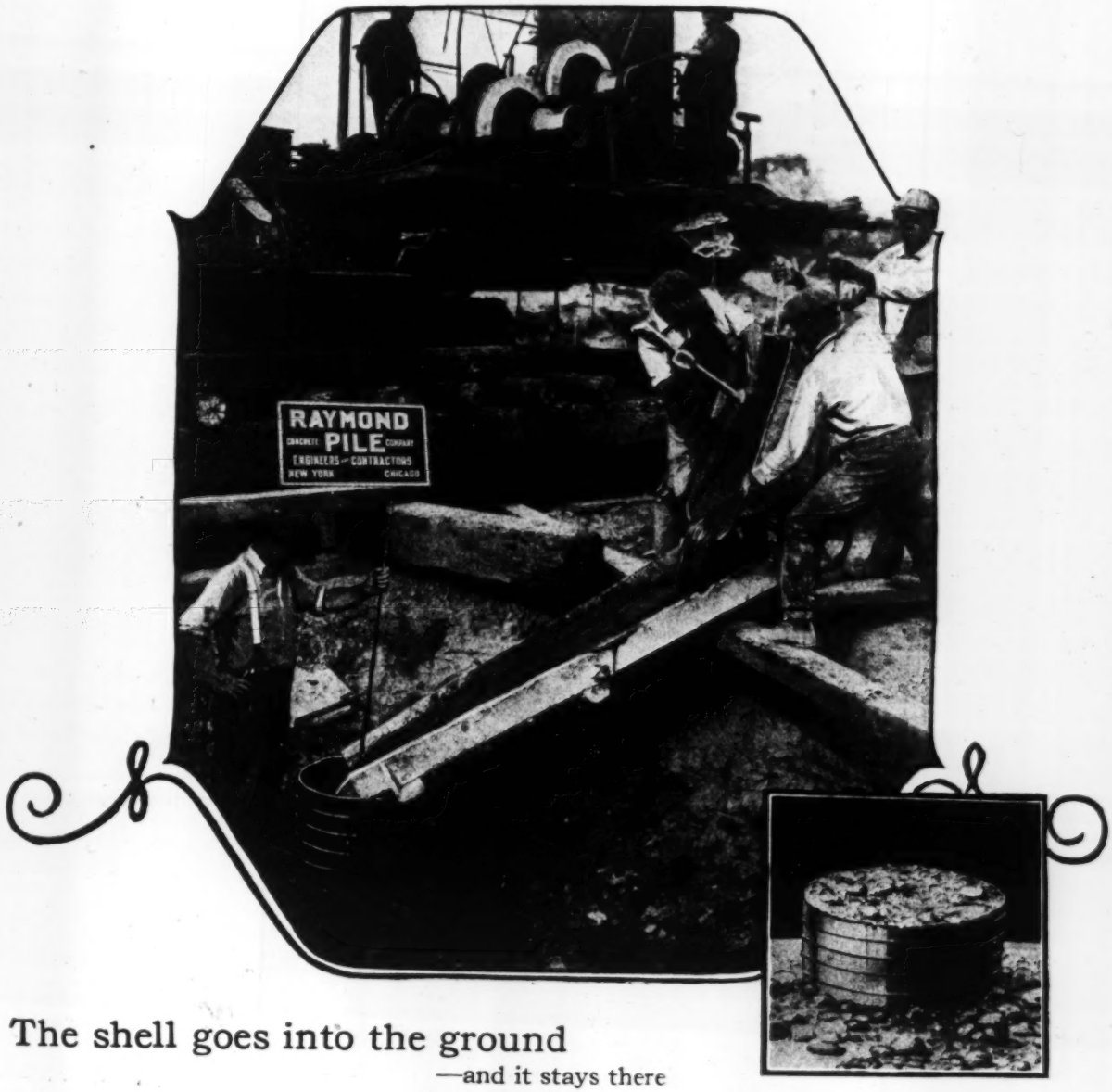
Supt. of Transportation.

"....to Make It Our Standard Equipment"

A Vertical Capstan Winch saves time and labor. Equipped with it, your trucks can haul cable, raise poles, or do any of a great number of jobs—each at a minimum of expense. Write for full information.

MEAD-MORRISON
MANUFACTURING COMPANY
1229 Prescott Street East Boston, Mass.

Multiplies Man-Power
HOISTING — HAULING — HANDLING



The shell goes into the ground

—and it stays there

The Concrete goes into the shell

—and the shell protects it

That is the sole function of the spirally reinforced tapered steel shell into which every standard Raymond Concrete Pile is poured — to protect the length, taper and section of the "green" concrete column — to make certain each pile will be perfect.

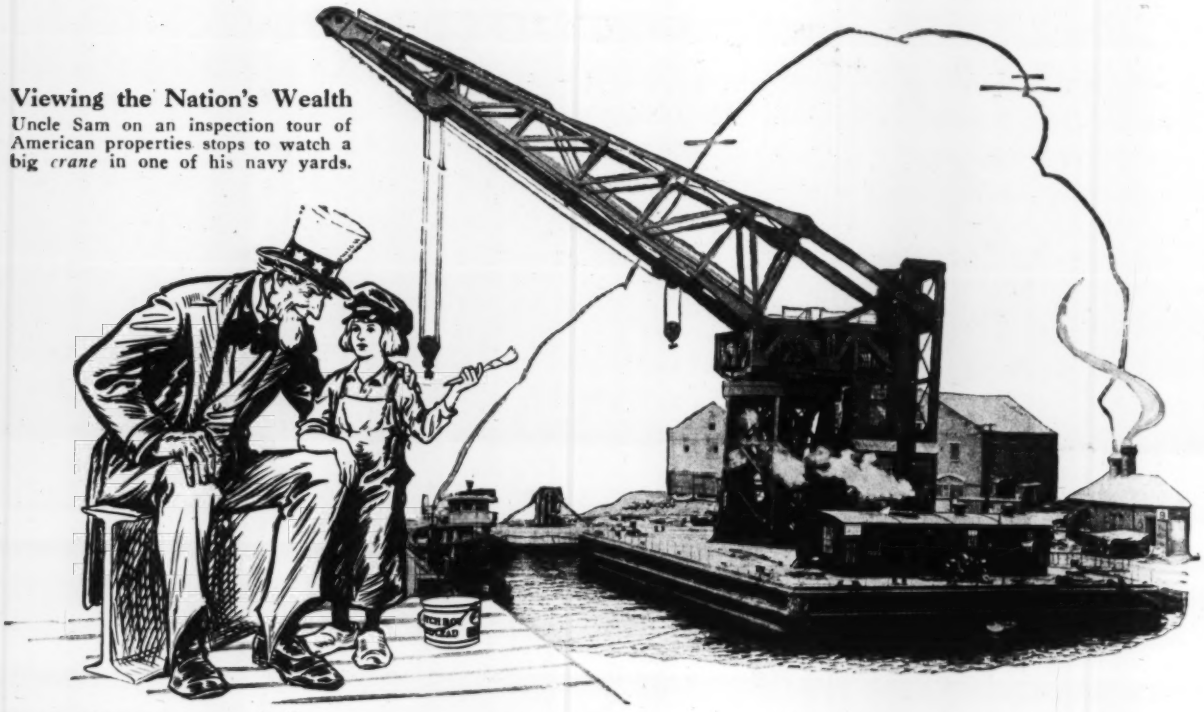
"A Form for Every Pile— A Pile for Every Purpose"

RAYMOND CONCRETE PILE CO.
New York: 140 Cedar St. Chicago: 111 W. Monroe St.

RAYMOND CONCRETE PILE CO., LTD.
Montreal, Canada

Branch Offices in all Principal Cities

Viewing the Nation's Wealth
Uncle Sam on an inspection tour of American properties stops to watch a big *crane* in one of his navy yards.



The Dutch Boy Painter:
"That floating crane can handle tons as easily as an elephant tosses straw. But neither its size, nor its power, can save it from ultimate destruction from rust—if its metal isn't protected!"

This 150-ton floating crane couldn't lift a rust-mortgage

UNPROTECTED metal surfaces soon become plastered with rust-mortages. Every engineer knows what that means. The metal has been robbed of a certain part of its strength. What has been lost can't be recovered, but rurther loss can be stopped and future loss can be prevented—*by red-lead.*

Red-lead has for many years been recognized as metal's best protection against rust. It is the standard protection. Rust can't form where there is a well-maintained coat of red-lead.

Because it is pure red-lead, Dutch Boy red-lead supplies complete protection to metal surfaces against rust. Rust never holds a mortgage on metal that is guarded by Dutch Boy.

Dutch Boy red-lead sticks tight to clean metal. It forms a tough, elastic coating which expands and contracts with the metal without cracking or checking. It becomes almost a part of the metal's surface. Dutch Boy red-lead costs no more than other good paints. In fact, its cost is materially decreased by its unusual spreading power.

You can get Dutch Boy red-lead as a paste and also in liquid form ready for the brush. The *liquid* comes as straight, untinted red-lead for shop painting and priming coats. It is also tinted to greens, browns and black for finishing coats. The untinted *paste* can be tinted to any dark color.

For the complete protection of metal surfaces, specify Dutch Boy red-lead by name—then stop. There is no "or equivalent."

Write for Painting Helps No. 5.

"Save the surface and you save all"

NATIONAL LEAD COMPANY

New York, 111 Broadway; Boston, 131 State St.; Buffalo, 116 Oak St.; Chicago, 900 West 18th St.; Cincinnati, 659 Freeman Ave.; Cleveland, 820 West Superior Ave.; St. Louis, 722 Chestnut St.; San Francisco, 485 California St.; Pittsburgh National Lead & Oil Co. of Pa., 316 Fourth Ave.; Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut St.

Dutch Boy Red-Lead

Accurate Decimal Points

SUPPOSE you had a Scratch Pad with Decimal Points printed on it. Then when you wrote the two factors of a decimal multiplication with the whole numbers to the left of the points and the decimals to the right, the correct answer would automatically appear, *accurately pointed off.*

Such a Scratch Pad would be valuable to you. Accuracy of decimals is equally as important as accuracy of figures.

The Monroe Calculating Machine gives you Proven Results, *accurately pointed off,* in just the same way. As you "write" the two factors of any problem in the machine, you immediately read the Proven Answer, with the decimal point in the correct place.

Ask to see why users say "the Monroe is the finest Scratch Pad ever given a clerk." The coupon below simplifies your request.

Monroe Automatic—Marks a new era in Mechanical Calculating and Adding. A portable, electrically-operated machine for use either on desk or stand.

To Add or Multiply, simply touch the Plus (+) Bar. To Subtract or Divide, simply touch the Minus (—) Bar. The Proven Answers automatically appear with split-second speed.

Monroe Standard Model—Every feature of the Standard Monroe is conducive to speed with absolute accuracy. A forward turn of the crank to add or multiply; a backward turn to subtract or divide.

Special Models to fit individual requirements—British Currency Model, Fraction Models, etc., on which all ordinary calculations may also be performed.

There are Offices rendering Monroe Service at all Principal Points in the U. S. and Canada and throughout the World.

MONROE
REG. TRADEMARK

Adds Subtracts

Multiplies Divides

The 20-Place Automatic Model

Monroe Calculating Machine Co., Woolworth Building, New York

"If you need a thing you pay for it —whether you buy it or not"

Without cost or obligation (check as desired):

[] Send further information on: [] Automatic Model [] Standard Model

[] Arrange for demonstration of: [] Fraction Models [] British Currency Model

*Firm Name*_____ *Individual*_____

*Address*_____ *City*_____ *State*_____

E. N.-R. 12-27-23

Ream With Heavy Production's Favorite Drill

BOILER makers, car builders and structural steel fabricators alike express their preference for Little Giant Electric Drills when used on reaming and tapping operations.

This mark of distinction has been given to Little Giants because they are successfully meeting their requirements in hundreds of boiler and car shops, structural steel plants and other industries where the gruelling work encountered is a fit test for any tool.

The economy, service and dependability of Little Giant Electric Drills is attributed to their design and construction. Large overload capacity, low temperature rise, high efficiency and long life are a few of their many points of superiority that mean economical operation over a period of years.

You can use one or more of these Little Giant Electric Drills profitably on your reaming and tapping work. Bulletin 891 describes them in detail. Write for your copy.

Chicago Pneumatic Tool Company

6 East 44th Street, NEW YORK, N. Y.

*Sales and *Service Branches all over the World*

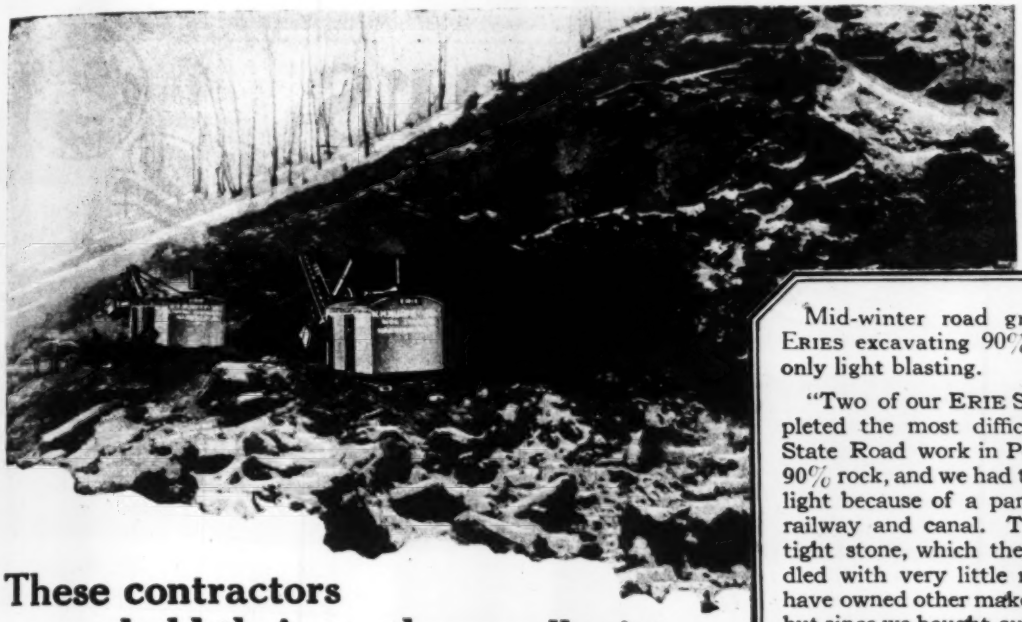
*Birmingham	*Cleveland	Houston	*New York	Salt Lake City	Tulsa	Brussels	Havana	London	Montreal	Rotterdam	Shanghai	*Vancouver
*Boston	Denver	*Los Angeles	*Philadelphia	*San Francisco	Basle	*Buenos Aires	Helsingfors	Manila	Osaka	Santiago	Tampico	*Winnipeg
*Chicago	*Detroit	*Minneapolis	*Pittsburgh	Seattle	Berlin	Christiania	Honolulu	Milan	Paris	*Sao Paulo	Tokyo	
*Cincinnati	El Paso	*New Orleans	Richmond	*St. Louis	Bombay	Dairen	Johannesburg	*Montevideo	*Rio de Janeiro	Seoul	*Toronto	

Canadian Pneumatic Tool Company, Ltd., Montreal, manufacturers of Chicago Pneumatic products in Canada.

EL-58

BOYER PNEUMATIC HAMMERS · · LITTLE GIANT PNEUMATIC AND ELECTRIC TOOLS
CHICAGO PNEUMATIC AIR COMPRESSORS · · VACUUM PUMPS · · PNEUMATIC HOISTS,
GIANT OIL AND GAS ENGINES · · ROCK DRILLS · · COAL DRILLS

LITTLE *Electric* **GIANT** *Tools*



Mid-winter road grading; two ERIES excavating 90% rock, with only light blasting.

"Two of our ERIE Shovels completed the most difficult piece of State Road work in Pennsylvania, 90% rock, and we had to shoot very light because of a parallel electric railway and canal. This left large tight stone, which the ERIES handled with very little repairs. We have owned other makes of shovels, but since we bought our first ERIE, we would have nothing else."— *R. C. Murphy, W. H. Murphy & Sons, Harrisburg, Pa.* (5 ERIES)

These contractors held their good men all winter —*at a profit*

Of course it pays well to hold on to good men who know your ways. Steady employment, 12 months a year, attracts the best class of skilled labor and common labor.

You have often seen a *permanent organization* beat the lowest costs that can be gotten with transient labor, that is hired for only a single "season."

Every winter there are more contractors holding their best men together by working right through cold weather, *and making money doing it.* In some cases the profit-per-yard has run higher than the same contractors were able to make during the warm months of the same year, when keen competition bid the prices way down.

There have been very good results on winter cellar excavation, trench digging, stripping gravel pits, quarries, and shale pits, road grading that is fairly heavy, ditching, etc.

The ideal machine for cold weather is the ERIE Shovel— because of its greater digging power, and its steady reliability. Actual records kept by experienced owners show that their ERIES cost only ½ as much to keep up as other makes of shovels that they have used— with A CORRESPONDING SAVING IN WORKING TIME.

Write and tell us what kind of winter work you are figuring on. We will send records of similar work, in full detail— showing you just what can be done.

Removing snow for street department at a good rental figure

C. C. Kilby, owner of the "A" ERIE above, saved the city of Hartford, Conn., 50% to 60% of the costs of removing 4 to 5 feet of ice and snow— and found profitable work for his shovels.

This ¾ cu. yd. ERIE and 3 five-ton trucks did the work of 50 laborers and 10 teams, and did it quicker.

Mr. Kilby writes: "We are greatly pleased with the work of our three ERIES; have found them very fast, with plenty of power for heavy work."

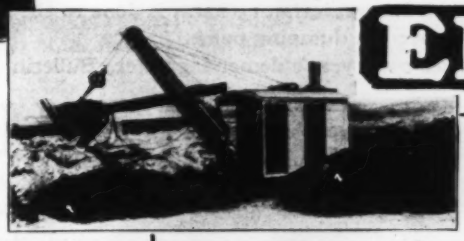
Laying Water Main: Any ERIE Shovel can be changed over in a few hours to a crane like the above, shown placing 36-ft. sections of steel water main pipe, Akron, Ohio. Also handled 10-ton valves. Operating a clam-shell bucket, it did the back-filling. One of 3 ERIES owned by P. F. Connolly Co., Cleveland.

ERIE STEAM SHOVEL CO., Erie, Pa., U. S. A.

Incorporated 1883; *formerly BALL ENGINE CO.* Builders of ERIE Shovels and Cranes

Branch Offices: Boston New York Philadelphia Pittsburgh Atlanta Chicago

Representatives throughout the U. S. A.

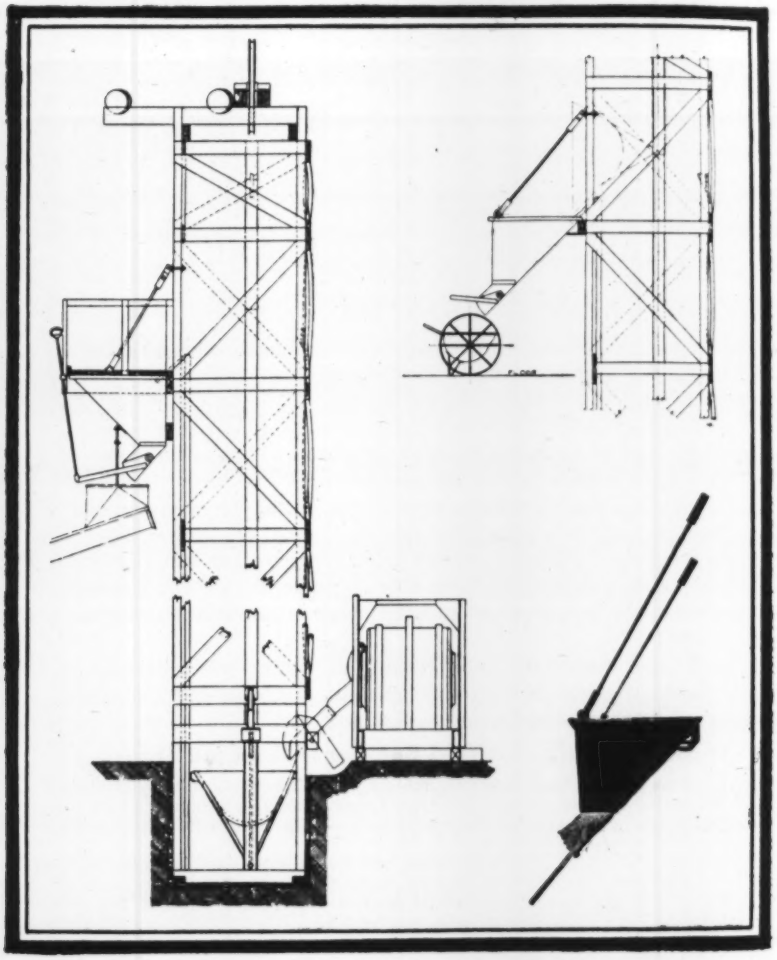


ERIE

"On this cellar cut we bucked frost with our "A" ERIE with wonderful success," *writes the Chas. H. Fry Construction Co., Erie, Pa.* "We have also had remarkable results with this ½ cu. yd. ERIE digging shale rock, which would be tough digging for a much heavier shovel."

For 20 years Ransome HOIST BUCKETS

A 20 year leader



For over two decades the **Ransome Hoist Bucket** has been prominent on the big concrete jobs throughout the world. It is used in conjunction with a straight back tower bin for a chuting installation or with a sloping back bin with cart distribution. The bucket operates quickly in a direct vertical lift. One of its great advantages is that no harm is done to the tower or bucket if the bucket is accidentally hoisted above the dumping point.

Its *simple and sturdy construction* makes each year's demand greater. Bulletin 202 gives complete information.

RANSOME CONCRETE MACHINERY CO.

1750 Second Street, Dunellen, N. J.

Manufacturers of Mixers, Pavers, Pneumatic Mixers, Chuting Plants, Hoist Buckets, Bins, Cars, Carts, etc.

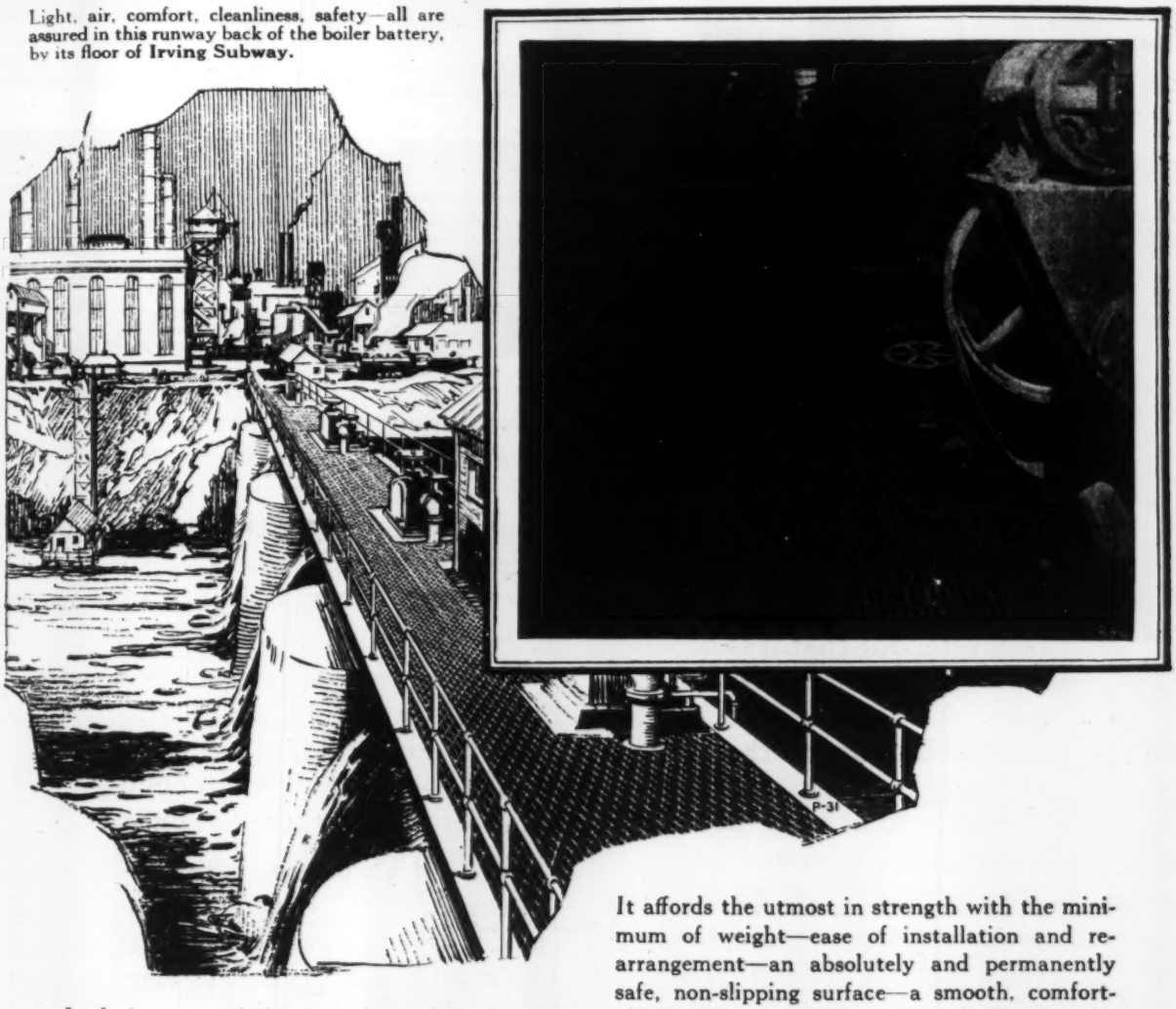
6169

IRVING SUBWAY
TRADE MARK

(PATENTED) REG. U.S. PAT. OFF.

THE FIREPROOF VENTILATING FLOORING

Light, air, comfort, cleanliness, safety—all are assured in this runway back of the boiler battery, by its floor of **Irving Subway.**

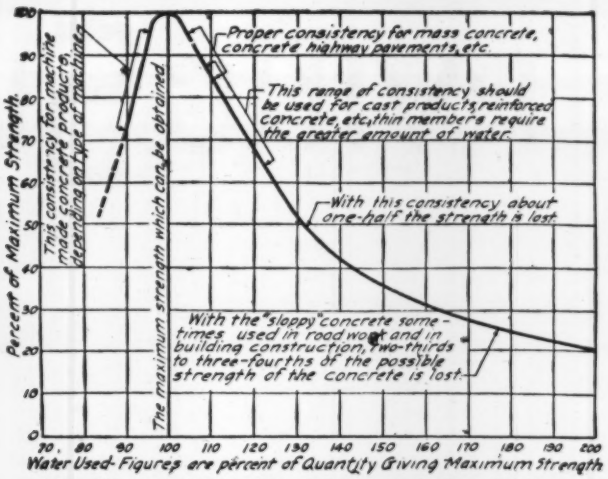


In dark, cramped places or out in the open—for narrow runways and walkways or for wide spaces—for indoor service or outdoor exposures—for every industrial purpose where safety, durability and economy count—**Irving Subway** offers advantages no other flooring affords.

It affords the utmost in strength with the minimum of weight—ease of installation and rearrangement—an absolutely and permanently safe, non-slipping surface—a smooth, comfortable footing to walk or work or wheel upon—the time-proofness, wear-proofness of steel—and (biggest factor of all, in value) the experience and responsibility of the oldest and largest manufacturers of open metallic flooring. Write for Catalog 4A5 and specify **Irving Subway.**

IRVING IRON WORKS CO.
LONG ISLAND CITY, N.Y., U.S.A.

When One Pint of Water Wastes Two Pounds of Cement


Percent of Maximum Strength
Proper consistency for mass concrete, concrete highway pavements, etc.
This range of consistency should be used for cast products, reinforced concrete, etc., thin members require the greater amount of water
With this consistency about one-half the strength is lost
With the "sloppy" concrete sometimes used in road work and in building construction, two-thirds to three-fourths of the possible strength of the concrete is lost
This consistency for machine made concrete products, depending on type of machine
The maximum strength which can be obtained
0 10 20 30 40 50 60 70 80 90 100
70 80 90 100 110 120 130 140 150 160 170 180 190 200
Water Used—Figures are percent of Quantity Giving Maximum Strength

Effect of Quantity of Mixing Water on the Compressive Strength of Concrete
NOTE: In general construction, the maximum strength can rarely be obtained, but it is possible to obtain 70 to 90 per cent of the maximum strength without additional expense by restricting the quantity of mixing water.

Observe this curve closely. It shows impressively the effect of the quantity of mixing water on the strength of concrete.

It is now known that excess mixing water, not only weakens concrete, but that it is actually wasteful of cement. One pint of water more than necessary in a one-bag batch decreases the strength and resistance to wear as much as though two or three pounds of cement were left out.

Here is a fact, which if brought home to the superintendent and the foreman, can be of great practical value in raising quality on the job.

Wouldn't you like to have, right at hand for quick reference, a practical manual which tells how the quantity of mixing water can be closely controlled, so as to give concrete greater strength without using any more cement?

Then write today for our free booklet, "Concrete Data for Engineers and Architects." We will be glad to send you extra copies for superintendents and foremen.

Take full advantage of the service the Portland Cement Association has to offer. One of the District Offices of the Association is always near you. Get acquainted with it.

PORTLAND CEMENT ASSOCIATION

A National Organization to Improve and Extend the Uses of Concrete

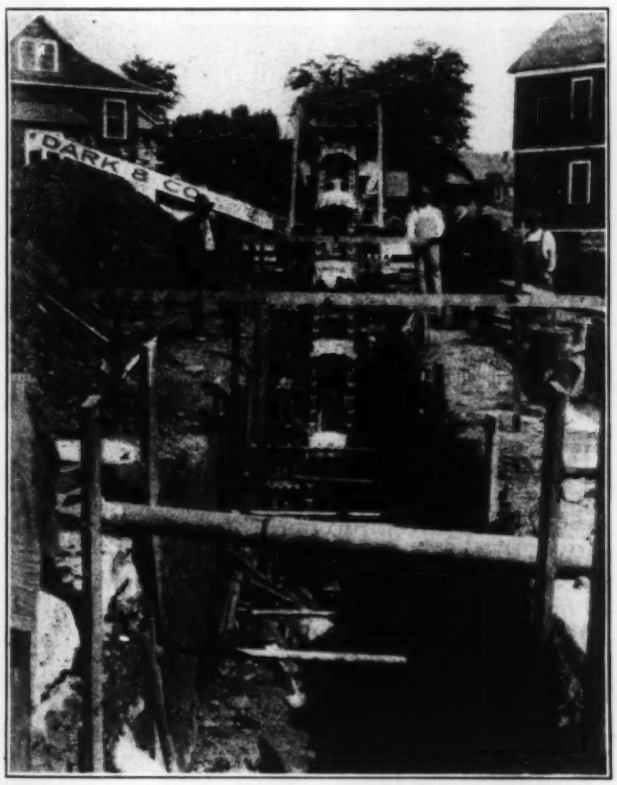
Atlanta	Denver	Kansas City	New York	San Francisco
Birmingham	Des Moines	Los Angeles	Parkersburg	Seattle
Boston	Detroit	Memphis	Philadelphia	St. Louis
Chicago	Helena	Milwaukee	Pittsburgh	Vancouver, B.C.
Dallas	Indianapolis	Minneapolis	Portland, Oreg.	Washington, D.C.
	Jacksonville	New Orleans	Salt Lake City	

AUSTIN MACHINERY

"MOVES THE EARTH—MIXES THE CONCRETE"

TRADE MARK

Economies in Trench Excavation are effected by the Equipment you employ



Efficiency comes from Experience. And experience is not gained on the drafting board but on the job under actual working conditions.

Every Austin Trench Excavator has back of it forty years of "On-the-Job" experience.

Economies are effected through the use of larger power units, safety features that avoid breakdowns, heavy construction, patented devices and ability to dig anything that is classed as earth excavation.

This is AUSTIN TRENCH DIGGING efficiency summed up and the guarantee of economy on every job.

AUSTIN MACHINERY CORPORATION

MAIN OFFICES

3500 DORR STREET, TOLEDO, OHIO

The PENNSYLVANIA APARTMENTS

One of the newest, largest, best equipped Apartment Hotels in Philadelphia

Pennsylvania Apartments
39th and Chestnut Sts., Philadelphia, Pa.

Owner and General Contractor: Daniel Crawford, Jr.
Architect: Clarence E. Wunder

A Havemeyer Job throughout

Using Havemeyer Bars, Lath and other Metal Products

Havemeyer Products used included Reinforcing Bars, Lath, Hangers, Channels, Ex-tension Clips, Wire Chain Spacers, No. 2 Bar-Tys, Corner Bead Clips, Corner Bead. Material was furnished and delivered to the job from our Warehouse as and when required, thus saving the contractor any double handling or storage.

You can depend upon Havemeyer Service

HAVEMEYER BARS
Rolled Exclusively From
NEW BILLET STEEL

Concrete Steel Company

42 Broadway **New York City**

Sales Offices, Warehouses and Fabricating Shops—Principal Cities

On Some Jobs

The "Wheel" Machine's The Thing

Cross-country road building needs the "Creeper Type" Path Digging Loader—but city work or material yard handling is just as well done with the "Wheel Type" Machine.

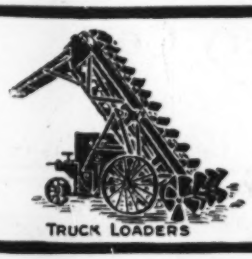
Has the wonderfully efficient Haiss Self-Feeding Propellers and a slow-speed drive of 30 inches a minute to crowd it against the pile. Self-propelling, of course.

Digs and loads 1 cu. yard per minute (and better) in crushed rock or other material—and does all the work with a labor cost of one operator only.

"The man who owns one" buys a second out of the first one's savings. Repeat orders on Haiss Loaders are a matter of course.

Catalog 523 describes both Creeper and Wheel Machines Send for a Copy

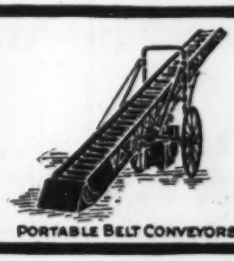
The Geo. Haiss Manufacturing Co., Inc., 140th St. and Rider Ave., New York



HAISS

MATERIALS HANDLING EQUIPMENT

CLAM SHELL BUCKETS



A "Sure 'Nuff"

RIP-SNORTER

Users of the Austin Rip-Snorter know how appropriately it was named. When it comes to tearing up a hard-as-sin, worn out, rutted road surface, no other machine or method can touch it.

On maintenance work the Rip-Snorter scarifies and grades in a single operation, leaving the road ready for rolling. In the preparation of an old road for resurfacing, the blade carries the scarified material to the sides of the road to form the new shoulders, or can be easily loaded in wagons.

Special Rip-Snorter Bulletin H suggests many other uses that the practical road man will find for this most efficient machine. Write for a copy today.

The Austin-Western Road Machinery Co.

400 N. Michigan Avenue, Chicago

BRANCH OFFICES:

Albany	Dallas	Little Rock	New York City	Salt Lake City
Atlanta	Denver	Los Angeles	Oklahoma City	San Francisco
Billings	Fargo	Nashville	Philadelphia	St. Paul
Columbus	Jackson, Mich.	New Orleans	Portland, Ore.	Wahoo, Neb.
	Kansas City, Mo.		Richmond	

Scraper in County Gravel Pit

Scraper and Traveling Tower

Scraper at Concrete Block Plant

Scraper on Cut-and-Fill Job

How Scraper Handles Stripping

The Brief Statement Below Gives You the Main Facts You Wish To Know Regarding

SAUERMAN Power Drag SCRAPERS

In excavating bank deposits of gravel, stripping overburden, making cuts and fills, cleaning out reservoirs, storing and reclaiming crushed stone, gravel or coal, Sauerman Power Drag Scrapers are money-savers because they possess large capacity, yet require no great outlay to install, operate and maintain. They show greatest economy in handling materials distances of 200 to 400 feet.

Description—There are three distinct types of Sauerman power scrapers. "Excavator," "LeClair" and "Crescent," each best suited to a particular class of work All are bottomless, hence self-loading and self-dumping. The operation consists simply of dragging the scraper back and forth over the deposit or pile that is to be excavated or rehandled. When the scraper reaches the dumping point, the operator causes it to deposit its load automatically by putting the pull-back cable in operation; one man at the levers of a double drum hoist controlling the complete operation.

Sizes—Standard sizes of Sauerman Power Scrapers are from 1/3 to 5 cu.yd. Larger sizes can be built to order as specified.

A portable power scraper outfit, designed for light excavating and material-handling, is offered in two sizes, ¼ and ½ cu.yd., with operating spans of 200 ft.

Service—If the illustrations here do not, give you sufficient evidence of the adaptability of Sauerman equipment for your conditions and requirements, submit your problem to Sauerman engineers. Their experience, gained through contact with over 1,000 installations of Sauerman cableways and power scrapers, is freely at your service.

Tell us what you want to accomplish, daily yardage you require and the surrounding conditions and we will suggest the type of equipment and general layout that will give you the desired result at lowest cost.

Sauerman Bros.
432 S. Clinton St., Chicago

Scraper Used With Crane

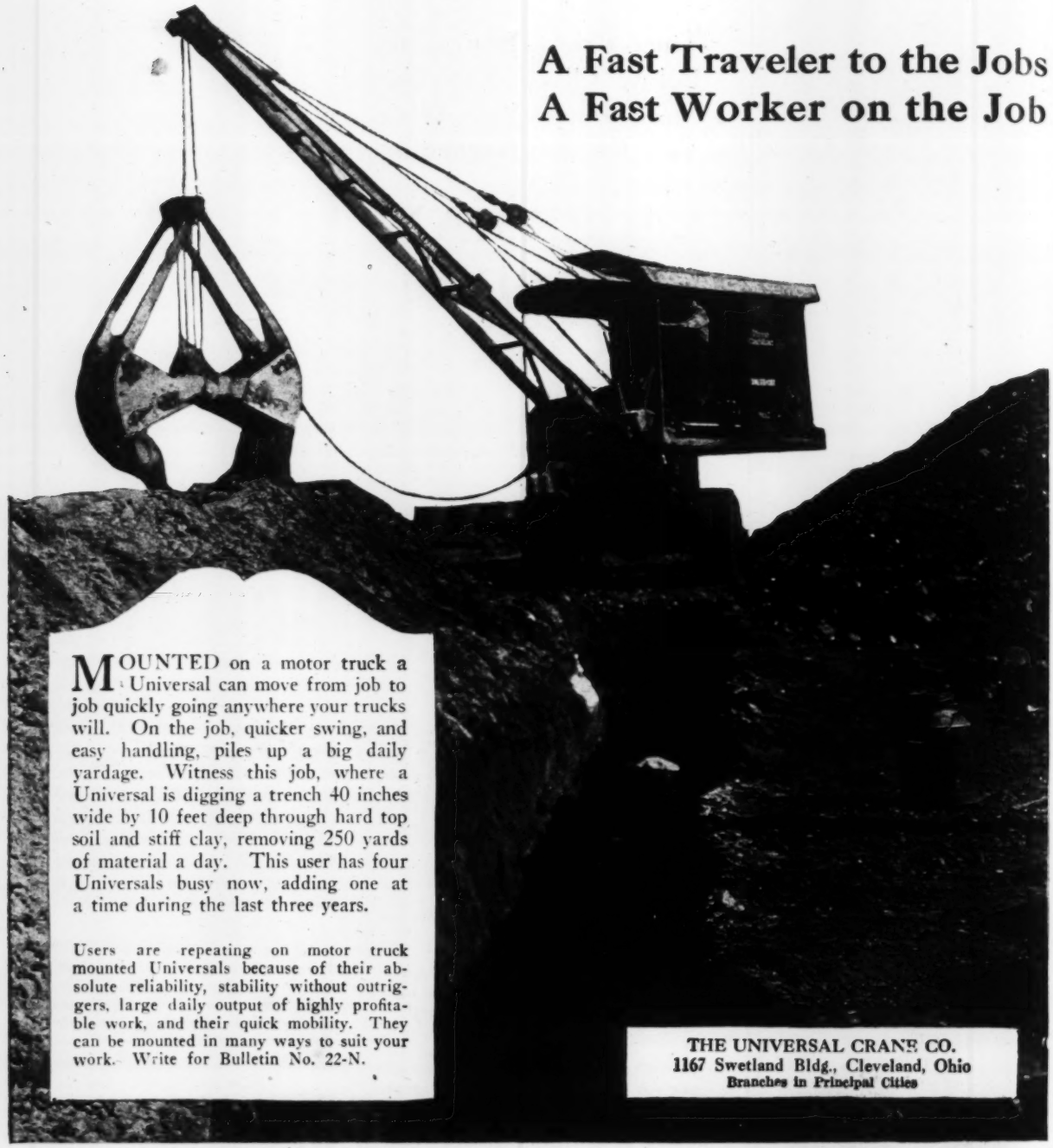
Scraper Cutting Through Hill

Grading Road With Scraper

Scraper Loading Stone Into Car

Loading Direct to Truck With Scraper

A Fast Traveler to the Jobs
A Fast Worker on the Job



MOUNTED on a motor truck a Universal can move from job to job quickly going anywhere your trucks will. On the job, quicker swing, and easy handling, piles up a big daily yardage. Witness this job, where a Universal is digging a trench 40 inches wide by 10 feet deep through hard top soil and stiff clay, removing 250 yards of material a day. This user has four Universals busy now, adding one at a time during the last three years.

Users are repeating on motor truck mounted Universals because of their absolute reliability, stability without outriggers, large daily output of highly profitable work, and their quick mobility. They can be mounted in many ways to suit your work. Write for Bulletin No. 22-N.

THE UNIVERSAL CRANE CO.
1167 Swetland Bldg., Cleveland, Ohio
Branches in Principal Cities

Every Batcherplant

a saver of TIME, LABOR AND MONEY

Some Users of
BLAW-KNOX Batcherplant
For Building and General Construction

Sanderson & Porter, New York City
West Penn Power Co Works at Springdale, Pa
American Construction & Securities Co Carrick, Pa.
South Pittsburgh Water Co
Walls, Reservoirs, etc., for Water Works
Youngstown Sheet & Tube Co., Youngstown, Ohio
Concrete Trestle, Industrial Construction
Phoenix Utility Co., Alexander, Idaho
Dam Construction
John A Byers, New Castle, Pa.
Railroad Overhead Crossing Pennsylvania R R and B & O
The Tennessee Electric Power Co., Rock Island, Tenn.
Power Development
S W Shoemaker & Sons, Harrisburg, Pa.
Reinforced Concrete Bridge Job
Skinner Maxwell Bldg. Co., Inc., Tuscaloosa, Ala
Building Construction
Boyajohn & Barr, Columbus, Ohio
Reinforced Concrete Buildings for Ohio State University
Metropolitan Edison Co., Philadelphia, Pa
Power House Construction
West Bros. & Co., Pittsburgh, Pa.
Juniata Railroad Shops for Pennsylvania R R, Johnstown, Pa.
H J Spieker Co., Toledo, Ohio
DeVilbiss Building Construction
Heller Bros., Youngstown, Ohio
Reinforced Concrete Factory Building, Warren, Ohio
Everett Winters Co., Detroit, Mich.
Building Work
C J Wacker Const. Co., Indianapolis, Ind.
Reinforced Concrete Building Job
Youngstown Steel Co., Youngstown, Ohio
New Industrial Construction, Foundations, Walls, etc
The Cranford Co., Washington, D. C.
George Washington Memorial, Alexandria, Va
G A & F M Wagman, Spring Valley, Pa.
Reinforced Concrete Bridge Construction
T H Reynolds & Co., New York City
New York Subway Construction

Building contractors all over the country are eliminating from 5 to 15 men at their central mixing and distributing plant

—through the use of a time and labor saving ONE-MAN Blaw-Knox Batcherplant for the quick and accurate measurement of sand, stone and cement.

A Blow-Knox Batcherplant—as the nucleus for a central mixing and distributing system—is the height of economy. We can equip any job, and help plan the layout.

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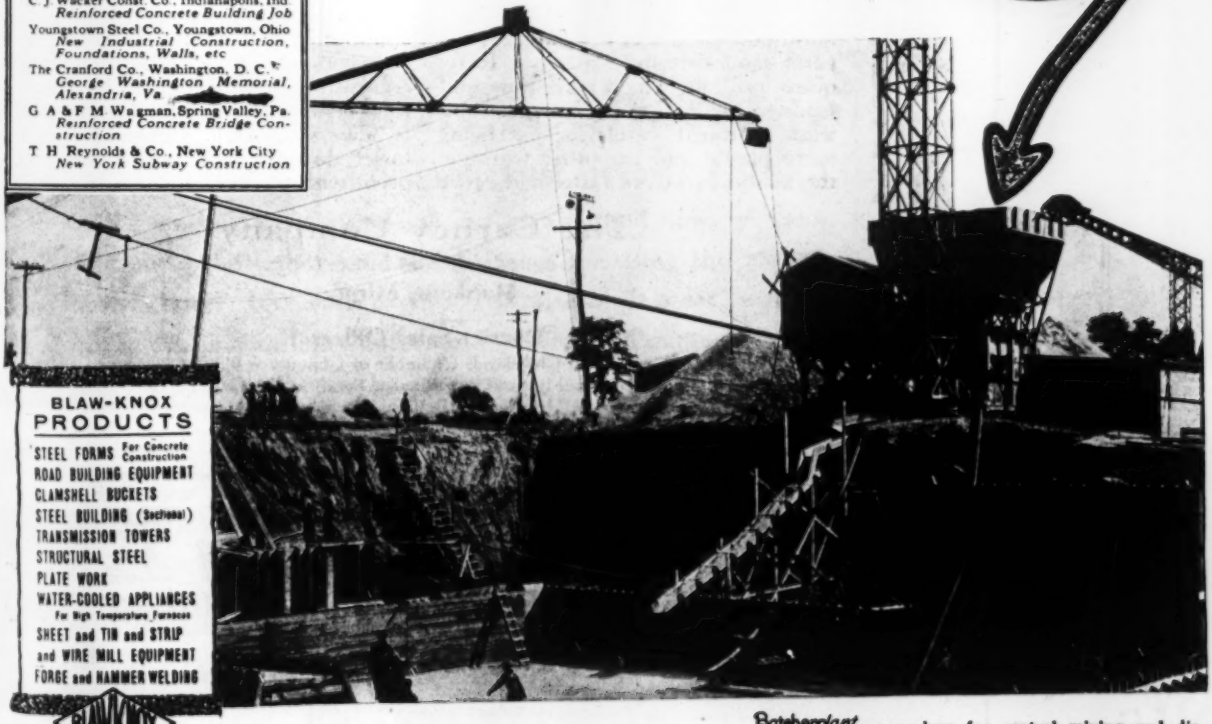
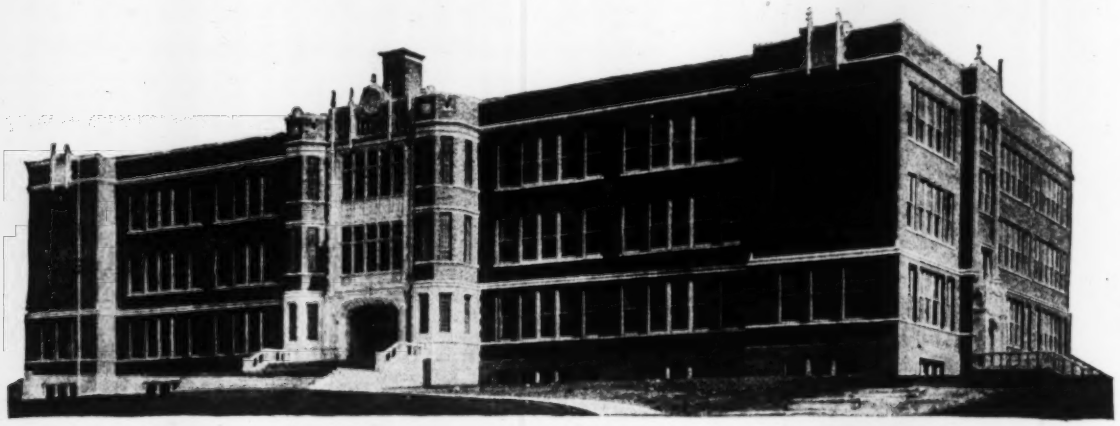
LONDON, ENG. Caxton House

FAST-EXACT proportioning of concrete aggregates



BLAW-KNOX PRODUCTS
STEEL FORMS For Concrete Construction
ROAD BUILDING EQUIPMENT
CLAMSHELL BUCKETS
STEEL BUILDING (Sectional)
TRANSMISSION TOWERS
STRUCTURAL STEEL
PLATE WORK
WATER-COOLED APPLIANCES For High Temperature Furnaces
SHEET and TIN and STRIP and WIRE MILL EQUIPMENT
FORGE and HAMMER WELDING
BLAW-KNOX

Batcherplant as nucleus for central mixing and distributing system—Metropolitan-Edison Co., Middletown, Pa. power plant.



Carney was specified for the McKinley Junior High School at Cedar Rapids, Iowa, as it is for hundreds of buildings throughout the country because it builds a better wall.

Architects: Rugh & Zalesky, Cedar Rapids, Iowa.

Contractors: Theo. Stark & Co., Cedar Rapids, Iowa.

Carney Sales Increase Each Month

THE merits of Carney have brought it into general use. Hundreds of Contractors know from practical experience that it saves time, money, and worry. Carney sales are increasing by leaps and bounds, due entirely to its good and saving qualities. Carney always builds a better wall at final lower cost. That is why we are building new mills.

Carney Has These Exclusive Merits

It can be used immediately after mixing or left in the box over night. There is no waste to Carney. Five bags to a barrel. Four and seventy-five hundreths cubic feet to a barrel. Four parts sand carrying capacity. It requires no lime, which saves time and labor in mixing. It prevents loss and waste through carelessness. Being more plastic and smoother working, the mason can work faster and easier on the wall. It lays the maximum number of brick to the barrel. It is ideal for wall bearing buildings. It becomes harder than the brick and tile it binds, continuing to harden indefinitely as time goes on. It sets a creamy white, contrasting beautifully with brick and tile. The final cost of a Carney wall is always lower. Contractors bid lower, do better work, and make more profit with Carney.

This book tells the complete story of Carney. It will be sent free to anyone interested in building.

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Cement Makers Since 1883

Mankato, Minn.

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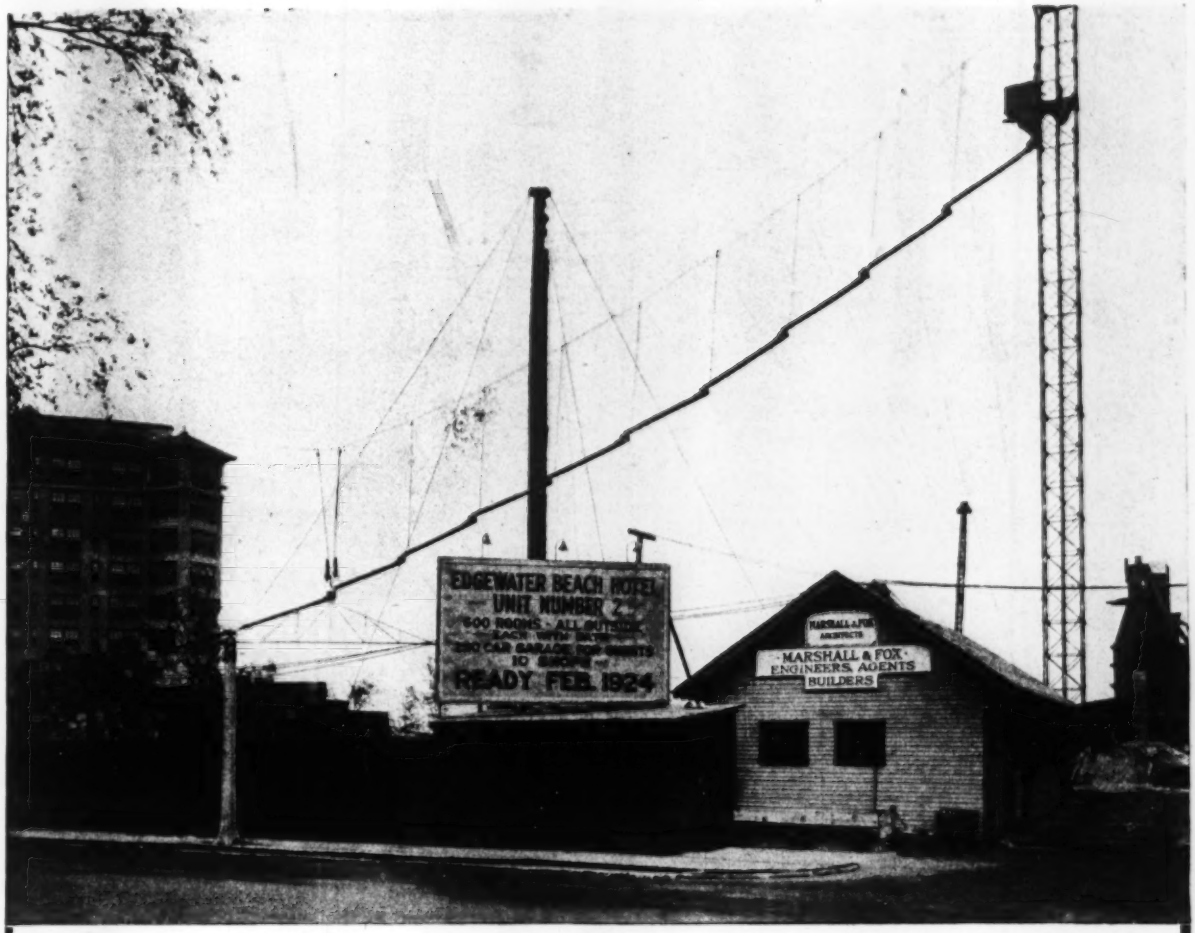
CARNEY

for Brick and Tile Mortar

Specifications: 1 part Carney to 4 parts sand. (due to refined process of manufacture.)



Insley Equipment for Handling Concrete

Marshall & Fox used INSLEY STEEL TOWER EQUIPMENT on the Drake Hotel job in Chicago, and now, on the addition to the Edgewater Beach Hotel are using the plant shown above. It consists of a 160 ft. Quick Shift Steel Tower, continuous line Insley Chutes, and an Insley Counterweight Chute which distributes the concrete.

Marshall & Fox are one of the many high class builders throughout the country for whom Insley Concrete Handling Equipment means complete satisfaction, as is best evidenced by the fact that they have used it not once, but several times.

INSLEY

CONCRETE PLACING EQUIPMENT
INDUSTRIAL CARS
STEEL DERRICKS
DUMP BUCKETS

INSLEY MANUFACTURING CO.

Engineers and Manufacturers

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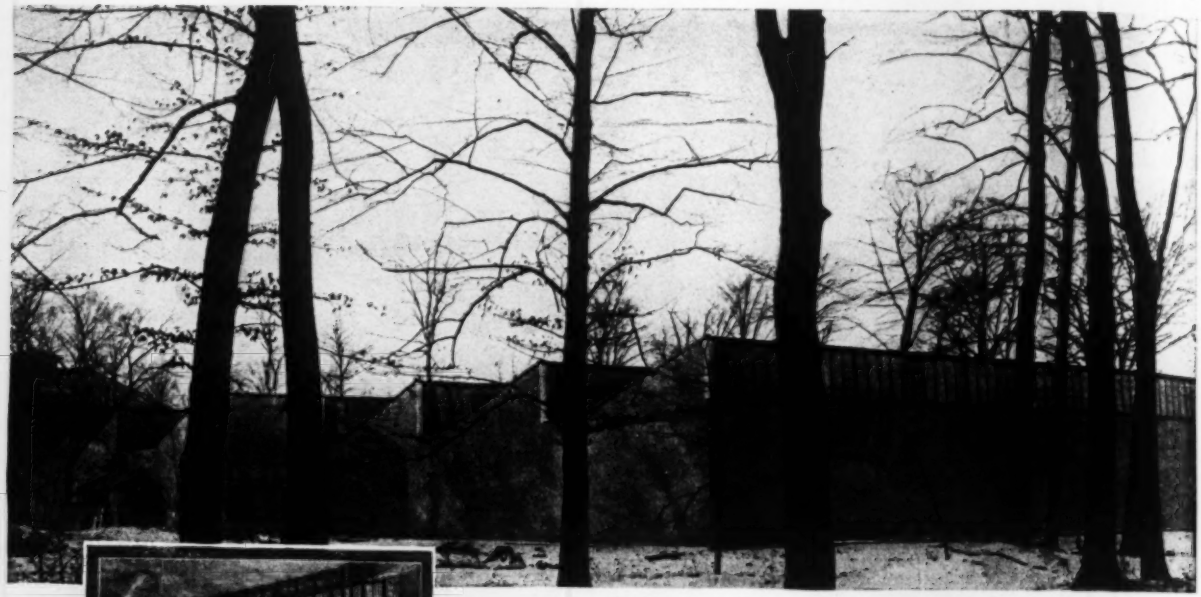
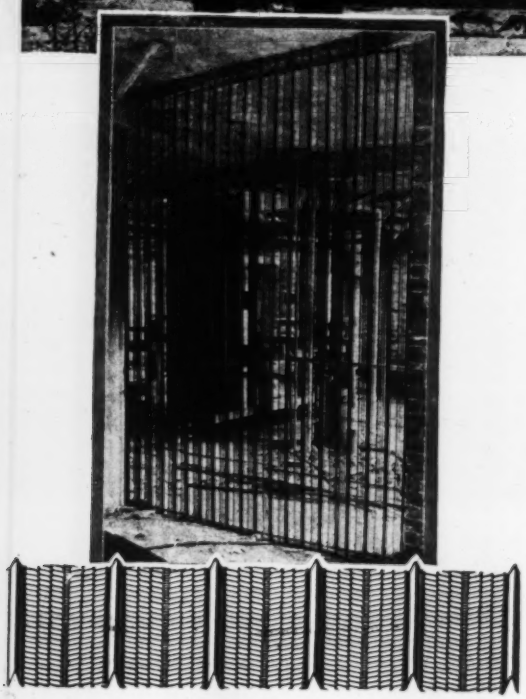


Chemical Laboratory Building Ohio State University, Columbus, Ohio. Architect, Prof. J. N. Bradford. Contractors, D. W. McGrath & Sons. 35,000 sq. ft. Berloy ¾-in. Ribplex used in the 2-in. solid walls and partitions.



¾-Inch Ribplex

This is a stiff, expanded metal mesh with ¾-inch ribs, spaced 4.8 inches on centers. Covering width of sheets is 24 inches, the ribs nesting together at sides and ends to make a firm, even splice.

¾-inch Ribplex has been used exensively as centering and reinforcement for concrete floors and roofs as well as for walls, partitions and many forms of special work. Other Berloy Products include ⅜-inch Ribplex, Diamond Mesh Lath, Metal Lumber and Floor Cores.

Two-Inch Walls and Partitions

To the adaptability of reinforced concrete there is no end. Proper distribution of steel is one of the biggest factors in its success and for many forms of concrete work. Berloy ¾-inch Ribplex has proven to be a very effective type of reinforcement.

Walls and partitions two inches thick with the ribs of the ¾-inch Ribplex placed vertically were used to excellent advantage in the building shown above.

The same type of construction has been used in many other buildings in walls, partitions, floors, roofs, and in a wide variety of special concrete work such as bath houses, ornamental fences, drying ovens, hand-ball courts and, in fact, wherever a light, strong concrete slab is desirable.

Another very effective basis for two inch solid walls and partitions is the use of ⅜-inch Ribplex with ribs horizontal wired to Berloy cold rolled channel supports.

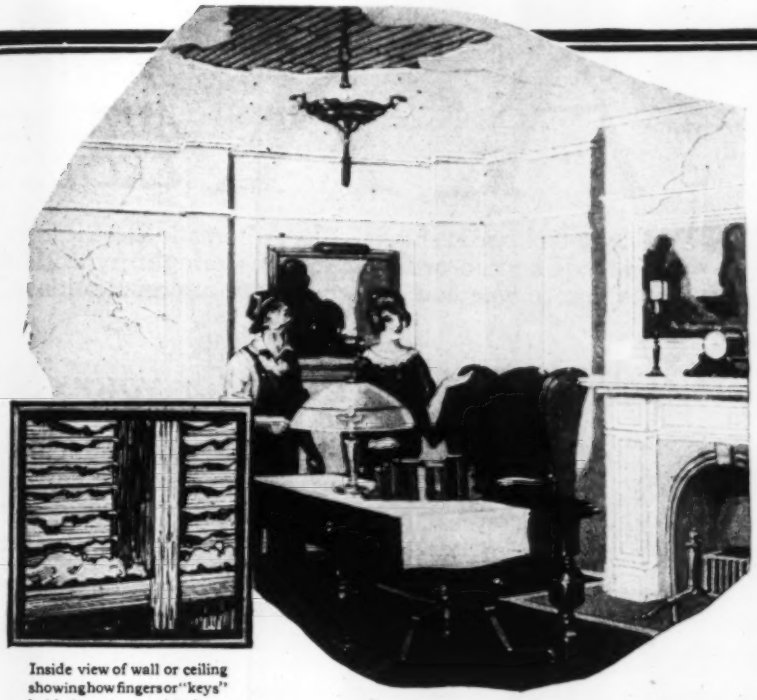
May we tell you more about this type of construction and its use? Please address Dept. F-24.

The Berger Manufacturing Co.

Canton, O., Boston, New York, Philadelphia, Chicago, St. Louis, Kansas City, Minneapolis, San Francisco, Los Angeles, Dallas, Roanoke, Jacksonville.

BERLOY

DIAMOND MESH LATH AND RIBPLEX



Inside view of wall or ceiling showing how fingers or "keys" hold plaster to wood lath.

why does PLASTER *crack?*

Plaster and stucco crack, and sometimes fall off, because expansion and contraction of lath causes the fingers or "keys" which hold it in place, to break off.

National Stucco-Plaster Reinforcement eliminates "keys".

This combination of base and *reinforcement* becomes an integral part of and thoroughly embedded in, plaster and stucco, and thereby prevents cracking and falling.

It provides very much stronger stucco and plaster than any other type of lath or base. It automatically "back-plasters" itself. It is fire-safe and sound-deadening. It eliminates dust streaks, lath marks, and rust marks.

It is applied either direct to studs and joists, or over sheathing or insulation It cannot be "skinned", yet takes less material because it eliminates "keys".

In all your work, use National Stucco-Plaster Reinforcement in place of lath, because it saves time, labor, and material, yet assures stronger plaster and stucco.

Our new catalog explains and proves *how* and *why* it is best to build with *reinforced* concrete, plaster, and stucco. Write for a copy—it is free.

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(*Subsidiary of Pittsburgh Steel Company*)

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There is a Style of National Steel Fabric for every type of concrete work.
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TRADE MARK

THE PRIVATE AUTOMATIC EXCHANGE

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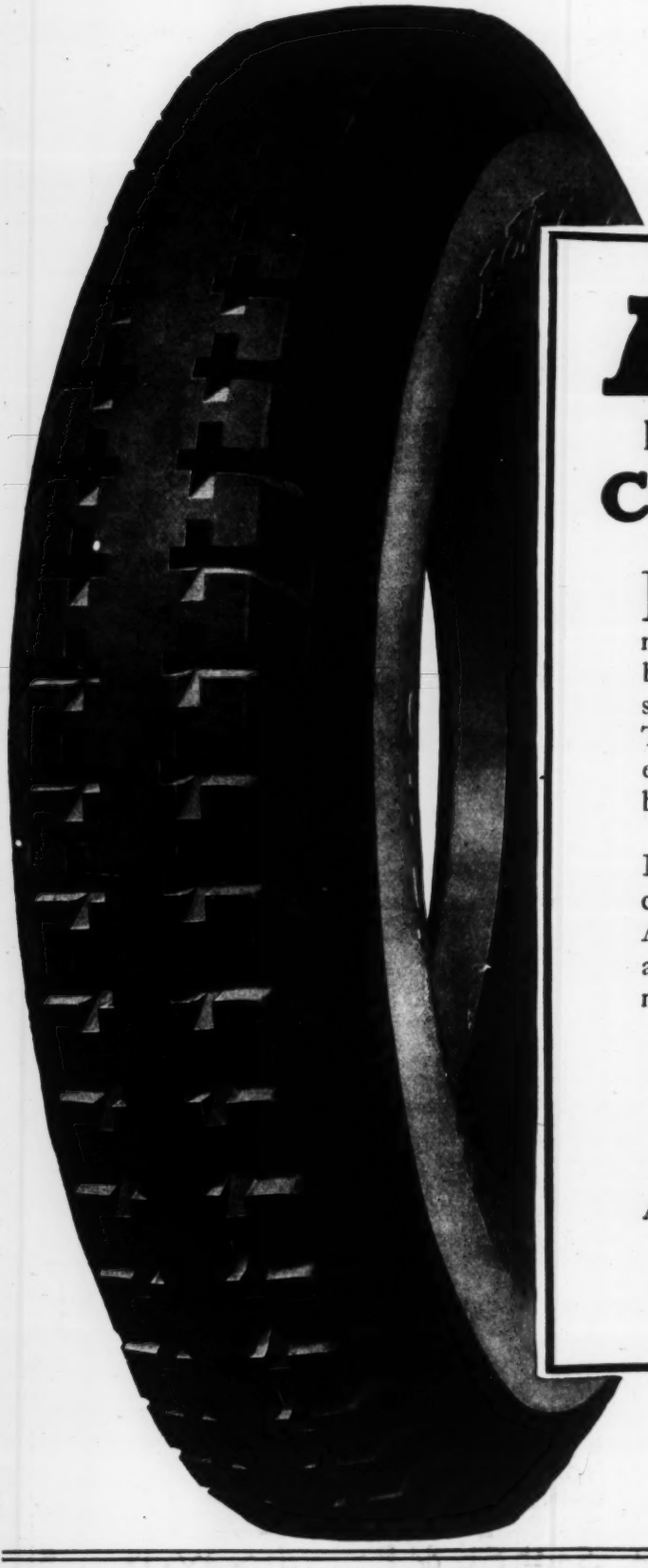

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It is this same engineering principle of Balance that distinguishes Ajax Cord Tires—the proper balance of strength, resiliency, toughness and traction.

Engineers and Contractors are invited to correspond with us on their problems relating to pneumatic cord tires.

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Ford
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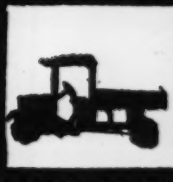

1924

Make no mistake! The passing of another year has been marked by enormous changes in the value of methods and tools!

A visit to the FORD POWER EQUIPMENT EXPOSITION will keep you posted on the vitally important savings effected in adapting efficient, low-cost FORD POWER to industrial and commercial use.

Here are gathered exhibits by more than 78 leading manufacturers of industrial, commercial and agricultural equipment using the Fordson Tractor and Ford One-Ton Truck as power plants.

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And Thews are made better today than ever before. New improvements. More conveniences. Added refinements.

Write us before you buy.

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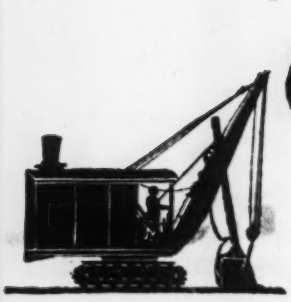
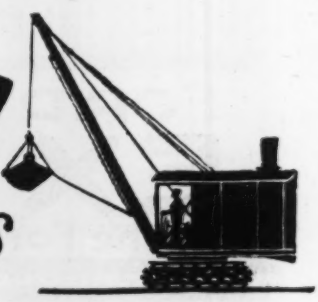
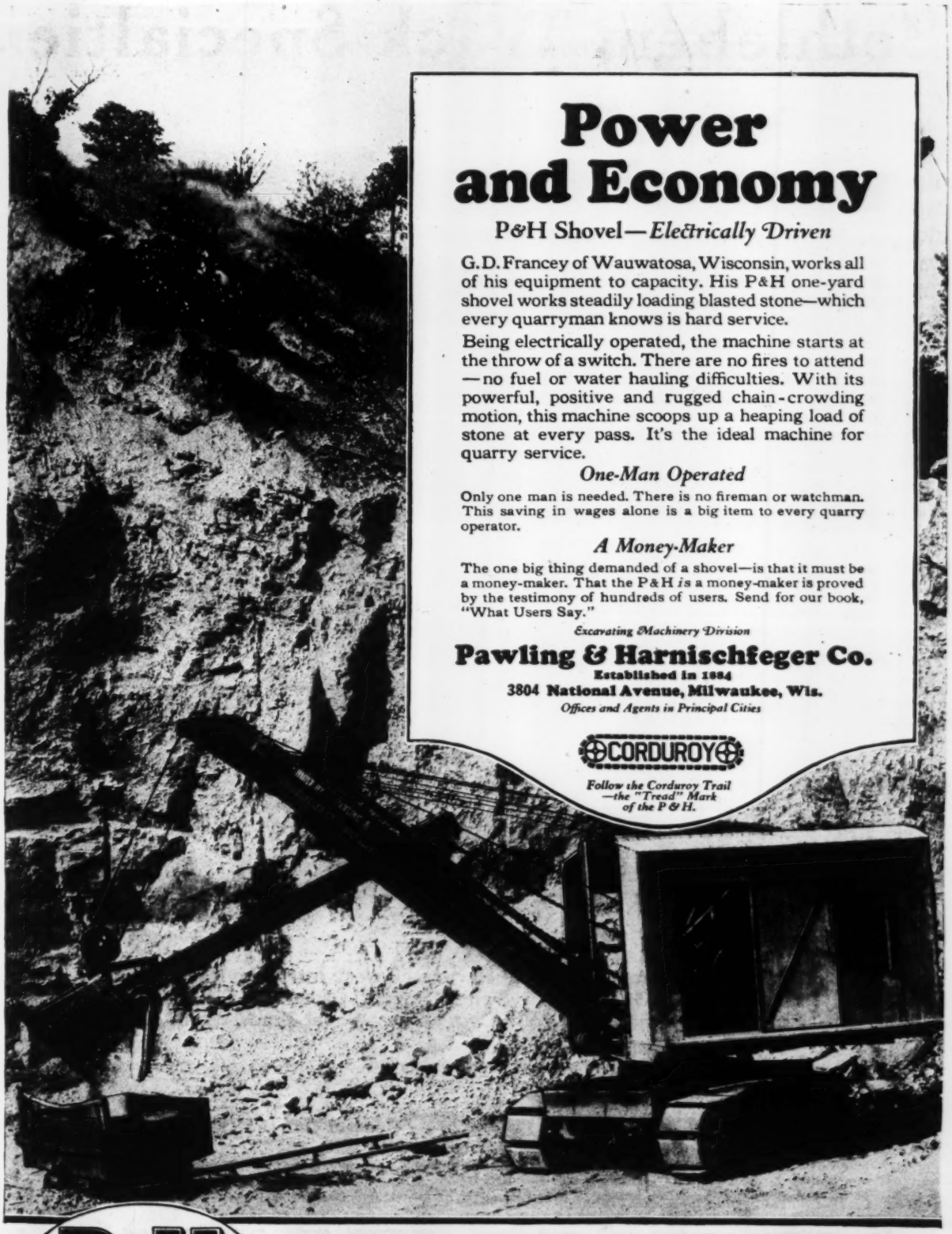


Thew
Power Shovels





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G. D. Francey of Wauwatosa, Wisconsin, works all of his equipment to capacity. His P&H one-yard shovel works steadily loading blasted stone—which every quarryman knows is hard service.

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The one big thing demanded of a shovel—is that it must be a money-maker. That the P&H *is* a money-maker is proved by the testimony of hundreds of users. Send for our book, "What Users Say."

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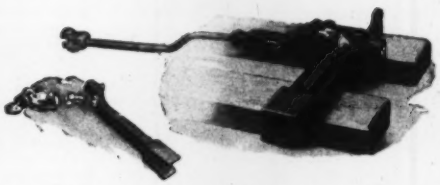
CAMBRIA MINE TIES are in one piece—no loose parts to mislay—clamping button quickly turned to position with hammer—track always to gage—extra ties can be added or taken out without disassembling track—longer life than wood ties—can be used many times.

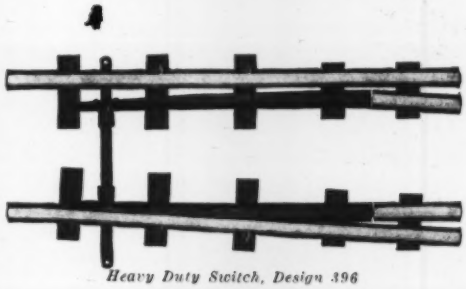
A Bundle of ten No. 2 Cambria Mine Ties

BETHLEHEM PARALLEL THROW SWITCH STAND, MODEL 1217, is adjustable for any throw—lever throws parallel to the track—when in normal position, lever is on "dead center" and switch is positively held—only 3″ high—only 3 moving parts—no bolts—can also be furnished with spring rod.



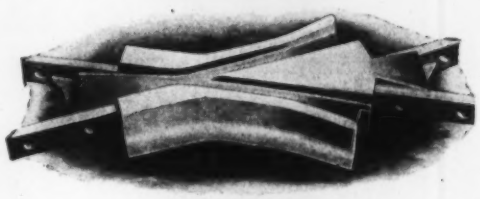
Parallel Throw Switch Stand, Model 1217

BETHLEHEM HEAVY DUTY SWITCH is fitted with extra heavy plates and braces—practically corrosion proof—will stand unlimited abuse—derailments eliminated—lengthens tie life—maintenance expense wiped out—plates and braces last indefinitely—switch points cost no more to renew than other kinds.



Heavy Duty Switch, Design 396

BETHLEHEM SOLID CAST FROG, Design 289, is made either of carbon, or manganese steel—strictly one-piece construction with no rivets or plates to work loose—flange bearing feature makes for smoother riding and reduces wear on wing rails and point—unbreakable and easy to install.



Solid Cast Frog, Design 289

Bethlehem also manufactures heavy track work for steam Railroads, such as Rails, Guard Rails, Switch Stands, Crossings, Tie Plates, Fish Plates, Splice Bars, Solid Cast Frogs, Special Track Work, etc.

Let us know your requirements and we will gladly furnish estimates

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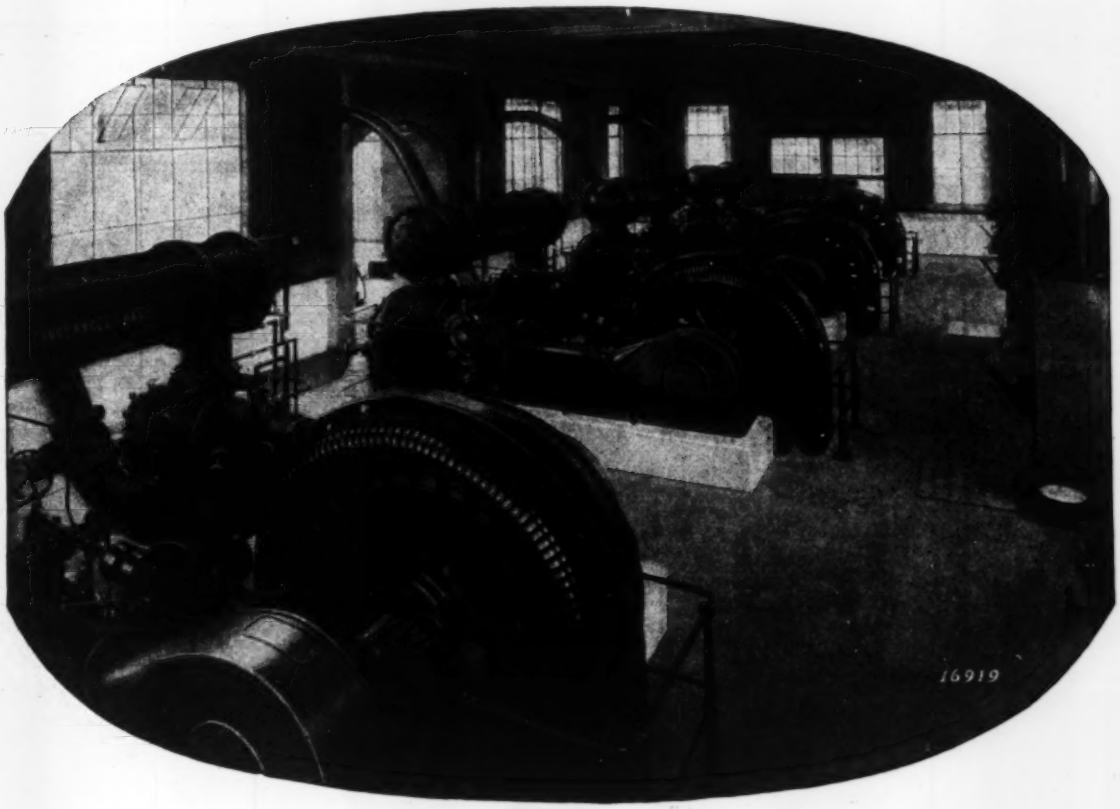

Compressor Efficiency At Full and Partial Loads With the 5-Step Clearance Control

The demand for air is seldom steady even during any one day. Throughout the year it is bound to vary in accordance with the shop's production.

Your compressor must be large enough to meet the shop's present or contemplated maximum demand. At the same time it should operate efficiently when delivering partial capacity so that the cost of air does not become excessive when the demand falls off.

Class PRE direct-connected, electric motor driven compressors are extensively used where large volumes of air are required. The volume of compressed air delivered by the compressor is efficiently regulated by means of the patented 5-step Clearance Control. With this regulation the compressor delivers automatically, full, three-quarter, one-half, one-quarter or none of its rated capacity. The horsepower required is reduced practically in proportion to the reduction in capacity.

Another feature of the 5-step Clearance Control is the maximum Demand Stop which prevents operation of the compressor at any higher maximum load than is desired. This is extremely important when a maximum demand of service charge is included in your contract for electric current.

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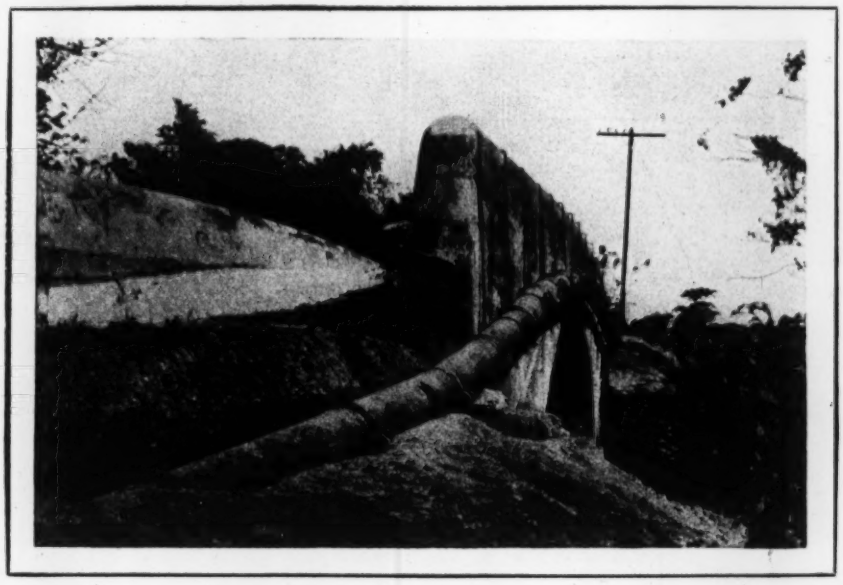

ARECIBO, P. R. wanted pipe for its water supply—reliable, durable, permanently tight pipe. "Universal" was laid because it possessed all of these essentials, *and more*—no expensive cumbersome joint-making equipment was needed, no time was wasted pouring and calking. The above line hugging the bridge is "Universal" 12-inch.

The flexibility and tightness of its machined joints make 'Universal' a great favorite for water supply, fire protection systems, sewage disposal, gas lines, subaqueous lines, and for other service where freedom from leakage is essential.

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Ratchet Wrenches the only tools—No bell holes to dig.

THE CENTRAL FOUNDRY COMPANY
Subsidiary of
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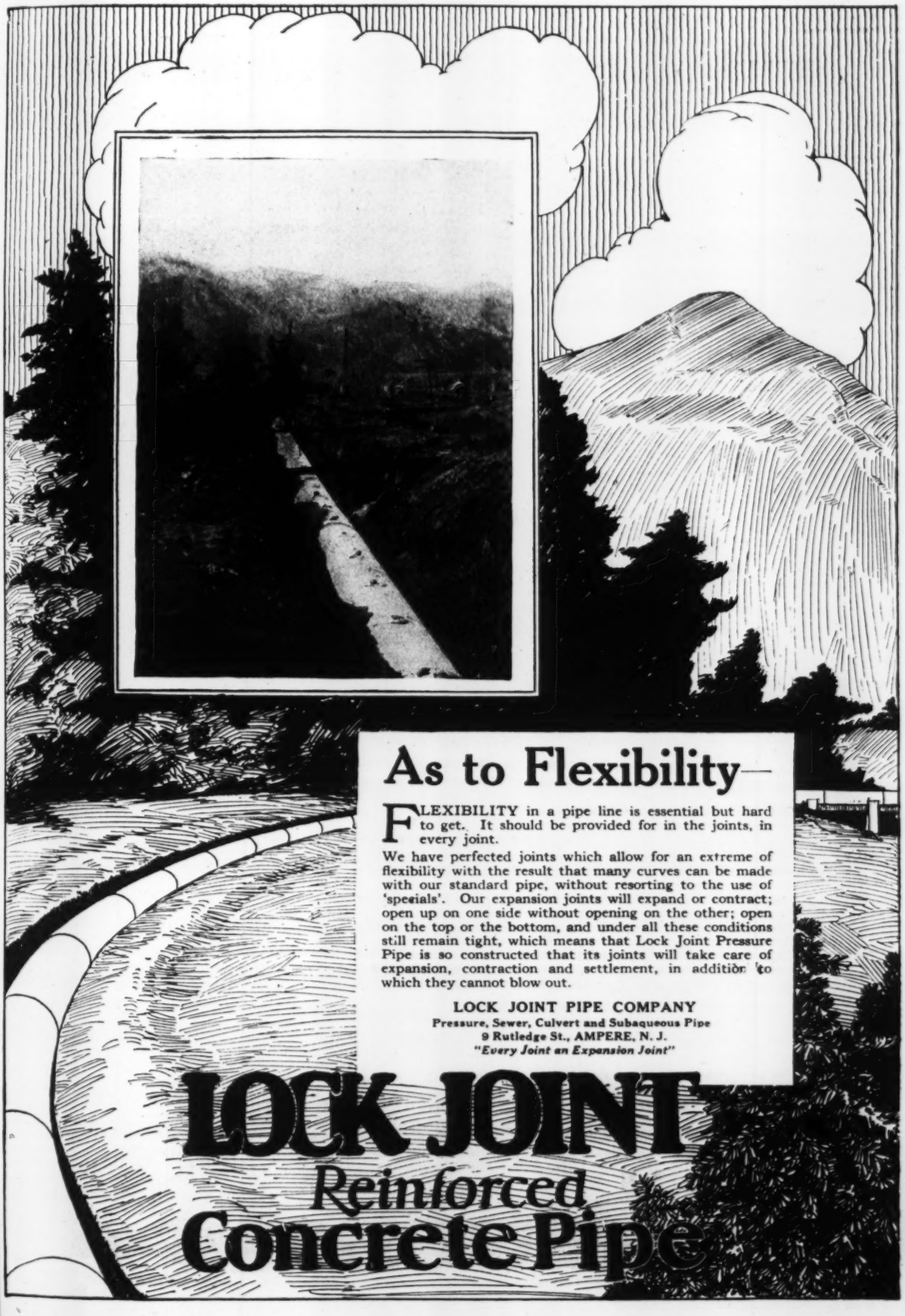
UNIVERSAL CAST IRON PIPE

tight, flexible, dependable—no lead, no calking, no bell holes to dig



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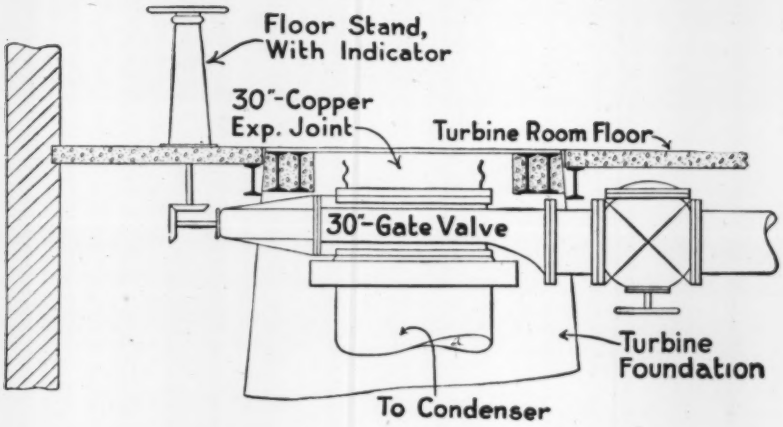
FLEXIBILITY in a pipe line is essential but hard to get. It should be provided for in the joints, in every joint.

We have perfected joints which allow for an extreme of flexibility with the result that many curves can be made with our standard pipe, without resorting to the use of 'specials'. Our expansion joints will expand or contract; open up on one side without opening on the other; open on the top or the bottom, and under all these conditions still remain tight, which means that Lock Joint Pressure Pipe is so constructed that its joints will take care of expansion, contraction and settlement, in addition to which they cannot blow out.

LOCK JOINT PIPE COMPANY
Pressure, Sewer, Culvert and Subaqueous Pipe
9 Rutledge St., AMPERE, N. J.
"Every Joint an Expansion Joint"

LOCK JOINT
Reinforced Concrete Pipe



Meeting Special Requirements is one of the features of "NAVCO" service

Where clearance or other structural conditions make the use of standard valves, fittings, or piping accessories impossible, we can meet the requirements by supplying special valves, fittings, and other castings from our own foundry.

The above illustration shows a 30-inch gate valve in the condenser connection of a turbine, with a 14-inch side outlet for the atmospheric exhaust connection. The center line of the branch is offset $3\frac{1}{2}$ inches to clear the I-beams in the turbine foundation.

This, and many other small details, make up an entire piping job. Our experience in this field should be invaluable to piping men and consulting engineers.

Send for our Catalog 5A. It should be in the hands of everyone who has to do with power piping.

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NAVCO **National** NAVCO

CHAPMAN

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Not every order, of course, is for sluice gates by the hundred. Our orders run from the little gates pictured here to giant gates that could dam a river. But every Chapman Valve or Sluice Gate is equal in QUALITY—a statement based upon OUR 50 years' manufacturing experience in this field, and upon USERS' years of experience with Chapman Products.

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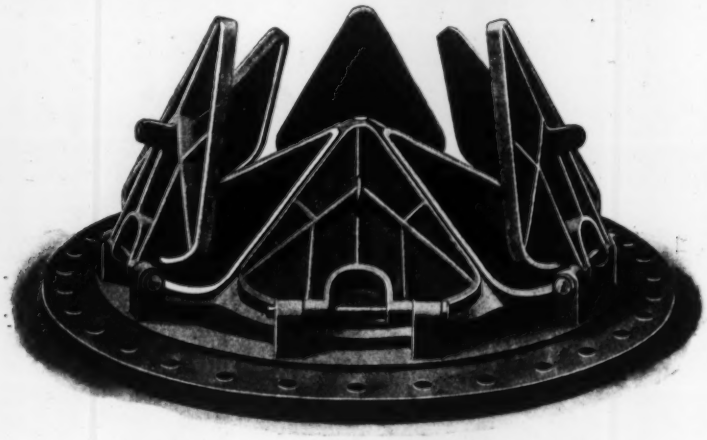
"One of the famous Coffin Products"

Coffin Foot Valve with strainer



Coffin Foot Valve with Shell removed. Note solidity.

SELF-SUPPORTING Foot Valves.

Note how the flaps are supported by their own HINGES—not by the water column.

They do not check the water flow.

The aggregate opening is 15% in excess of the pipe area!

All standard sizes with or without strainers.

COFFIN VALVE COMPANY

Makers of the Largest Sluice and Gate Valves in America

Check Valves
Flap Valves
Foot Valves
Sewer Gates

Office and Works, Neponset, Suburb of

BOSTON, MASS.,

Sluice Gates
Gate Valves
Butterfly Valve
Fire Hydrants

REPRESENTATIVES:

New York City: C. W. Bergen & Co., 50 Church St.
Cleveland, Ohio: Tomlinson Steam Specialty Co., 1597 St. Clair Ave.
Philadelphia, Pa.: DeHuff & Hopkins, Morris Building
San Francisco, Cal.: Theo. F. Dredge, Monadnock Building
Toronto, Ont.: The Arthur S. Leitch Co., Ltd., 1001 Kent Building
Montreal, Que.: Sterling Engineering Co., 232 St. James St.

Cut Your Water Bill, Reduce Your Pumping Costs

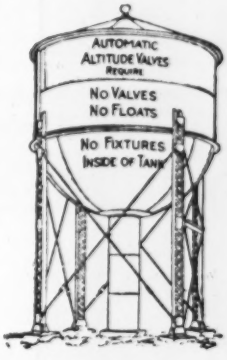
No Metal to Metal Seats.
No Water Hammer.

The water that overflows from your tanks, standpipes, reservoirs, etc., represents a double loss—a loss in power required to pump it there, and a loss in water. Such waste can be eliminated *completely* by the installation of

GOLDEN-ANDERSON

Automatic "Cushioned" Controlling Altitude Valves

They maintain a constant level automatically, without the use of floats or fixtures inside or outside the tank. No human element is involved. These valves may be closed in three ways, (1) automatically by water, (2) by electricity (3) by hand. They may also be arranged to close automatically when a break occurs in the mains. When necessary, they may also be connected to "close both ways" in a single line of pipe.

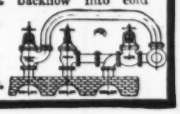


Golden-Anderson Valve Specialty Co.,
1202 Fulton Bldg., Pittsburgh, Pa.

GOLDEN-ANDERSON
Pat. Automatic Double Cushioned Triple Acting Non-Return Valves

1. Prevent shut-downs due to reversal of steam flow.
2. Instantly close and isolate a boiler when a tube bursts.
3. Cut off steam flow from every boiler instantly when a steam pipe ruptures.
4. Automatically cut a boiler into line.
5. Prevent backflow into cold boiler
6. The only valves that can be tested in service.

Angle Globe or Elbow Pattern



No Bursting Mains

Every Valve with an Absolute Guarantee

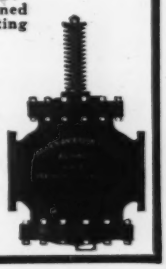
GOLDEN-ANDERSON
Pat. Automatic Cushioned Water Float Valves

1. Automatically Maintain Uniform Water Levels in Tanks, Standpipes, etc.
2. Instantly Adjusted to Operate Quickly or Slowly.
3. Floats Swivel to any Angle—Most Satisfactory Float Valves Known.
4. No Metal-to-Metal Seats — No Water Hammer or Shock.
5. Cushioned by Water and Air.

Hosts of References

GOLDEN-ANDERSON
Pat. Automatic Cushioned Water Pressure Regulating Valves

1. Maintain a constant reduced pressure regardless of fluctuations on high pressure side.
2. Perfectly Cushioned by water and air. No metal-to-metal seats.
3. The best valve made for maintaining a constant low pressure where consumption is continuous.
4. Operates quickly or slowly as required—No attention necessary.
5. Positively no hammering or sticking. Sizes to 24 in.



No Water Hammer

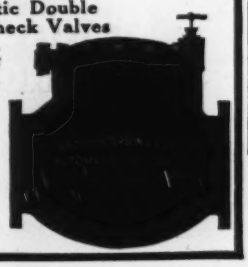
GOLDEN-ANDERSON
Pat. Cushioned Water Relief Valves

1. Automatically relieve excess pressure.
2. Prevent stress, strain and bursting of mains.
3. Correct mechanical construction.
4. Perfect air and water cushioning.
5. No metal-to-metal seats. No hammering or shocks.
6. Angle and globe pattern. Sizes 3 to 30 in

Stop-starter attachment for centrifugal pumps

GOLDEN-ANDERSON
Pat. Automatic Double Cushioned Check Valves

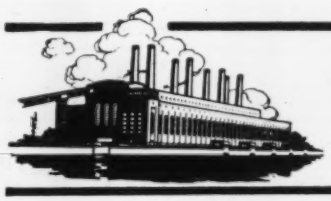
1. Especially adapted for Water Service.
2. For High or Low Pressure.
3. Thoroughly Cushioned, No chattering, Hammering, or Sticking.
4. Globe or Angle Patterns up to 30 in.
5. Especially adapted for hydraulic elevator service.



GOLDEN-ANDERSON
Pat. Cushioned Electric Water Service Valves

1. Give instant control of water distribution from pumping station in case of fire.
2. Open or close by electricity from distant points—a.c. or d.c. circuits. Also close by hand.
3. No waste of electricity. Current is on only few seconds.
4. Cushioned in opening and closing.
5. No water hammer, shock, sticking, surging or chattering

No Metal-to-Metal Seats



POWER

Stone & Webster power stations designed and built, or now being built, total one and three-quarter million horse power—enough to operate the traction systems of New York, Chicago, Philadelphia, Detroit, Cleveland and St. Louis—our six largest cities.

Under construction is over 300,000 horse power. This is to supply Boston, Washington, Hartford, Lynn, Indianapolis, Fall River, Los Angeles and other cities.

Sixty public service corporations are served continuously by Stone & Webster engineers who make their plans and install their new generating and distributing equipment.

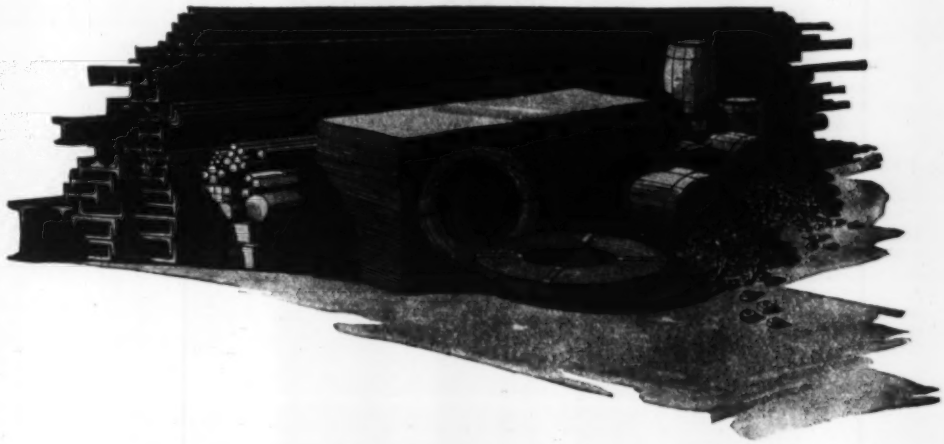
Stone & Webster engineers have examined and appraised properties to the total value of more than $4,500,000,000 including many of the country's foremost public utilities.

STONE & WEBSTER

INCORPORATED

DESIGN · BUILD
MANAGE
FINANCE

NEW YORK, 120 Broadway
SAN FRANCISCO, Holbrook Bldg.
CHICAGO, 38 S. Dearborn Street
PHILADELPHIA, Real Estate Trust Bldg.
BOSTON, 147 Milk Street



Everything in Steel When You Need It

WHETHER it's reinforcing bars and spirals or beams, bars, rails, bolts, rivets, or any other steel product needed by the contractor—Ryerson is the logical source.

First, because you can rely upon immediate shipment from our large and complete stocks. Second, because of our facilities for bending or cutting to the exact size you require. And third, because Ryerson *Steel-Service* may be taken literally. Our engineers—and in fact every member of our organization is ready to go out of his way to help you get the steel *where* you want it and *when* you want it.

The Ryerson Journal and Stock List contains complete information on all steel products—have you written for your copy?

JOSEPH T. RYERSON & SON INC.
ESTABLISHED 1842

CHICAGO ST. LOUIS CINCINNATI DETROIT BUFFALO NEW YORK

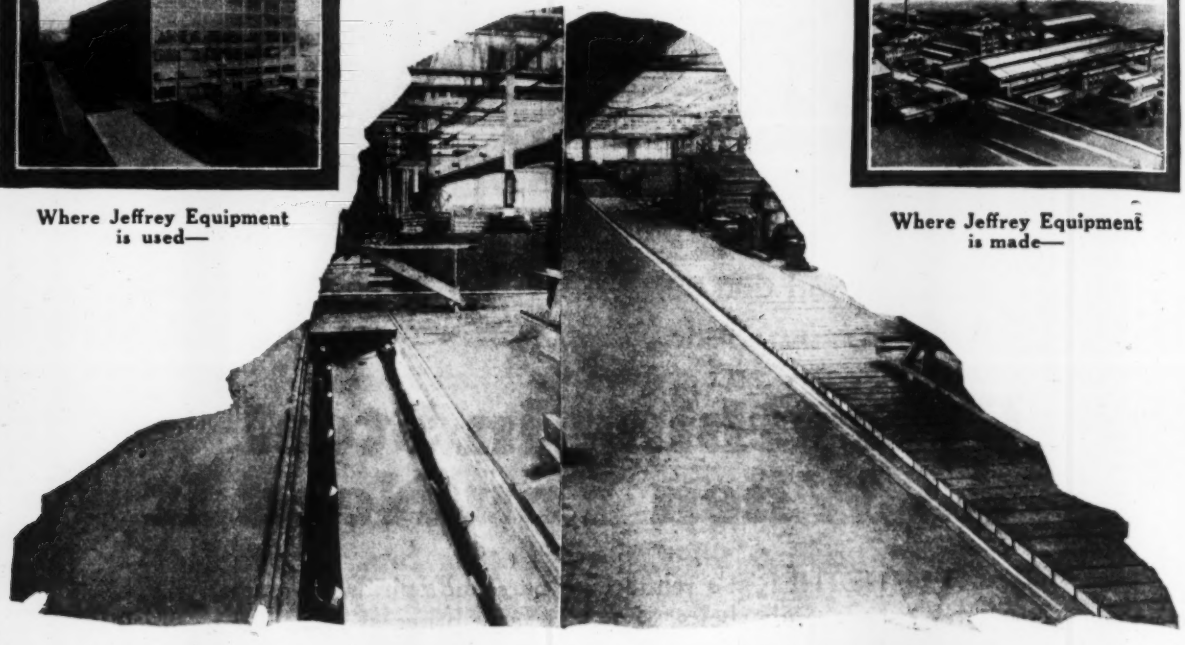
BRANCH OFFICES: DENVER HOUSTON JERSEY CITY
MILWAUKEE MINNEAPOLIS NEWARK SAN FRANCISCO TULSA

Jeffrey Material-Handling Equipment as used by the Fisher Body Corp'n

Wood Apron and Rubber Belt Conveyors

Where Jeffrey Equipment is used—

Where Jeffrey Equipment is made—



AT the Pontiac plant of the Fisher Body Corporation, the Jeffrey Belt Conveyor shown in the left hand illustration saves labor by handling waste wood or wood scraps from woodworking machines to storage.

This conveyor is 320 feet long, measuring 155 feet between centers; and travels at the rate of 100 feet per minute. It uses 24-inch four-ply canvas belting,—with 24-inch five-pulley troughing carriers mounted on wood base boards, and 24-inch standard flat belt carriers serving as return idlers.

The Jeffrey Conveyor shown at the right is part of a Jeffrey Wood Apron Conveyor System comprised of three units, employed to handle boards or finished wood shapes at the Pontiac plant.

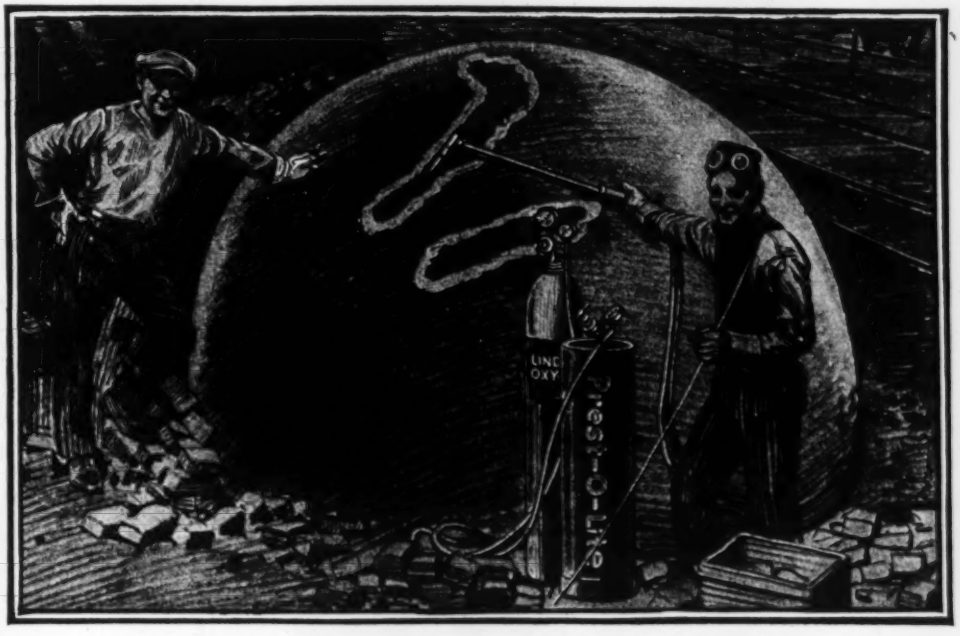
One unit, 400 feet between centers, uses 1615 feet of Jeffrey No. 126 Malleable Roller Chain. Another unit 130 feet at centers, utilizes 530 feet of the Chain; and the third unit, which is 245 feet between centers, uses 990 feet of the Chain.

Dependable, continuous operation is expected of these Jeffrey Conveyor systems — and is given.

The Jeffrey Manufacturing Company, Columbus, Ohio

NEW YORK, 30 Church Street
CHICAGO, 858 McCormick Bldg.
PHILADELPHIA, 515 Real Estate Tr. Bldg.
PITTSBURGH, Rea Bldg., 620 Second Ave.
MONTREAL, Canada, Power Bldg.
SCRANTON, PA., 518 Union Nat'l Bank Bldg.
ST. LOUIS, MO., 606 Pontiac Bldg.
BOSTON, MASS., 141 Milk Street
CLEVELAND, OHIO, 1519 Guardian Bldg.
DETROIT, MICH., 455 Book Bldg.
LOS ANGELES, CAL., H. W. Hellman Bldg.
DENVER, COLO., 1751 Wazee Street
MILWAUKEE, WIS., M. & M. Bldg.
CHARLESTON, W. VA., 914 Kanawha Street

JEFFREY
MATERIAL HANDLING EQUIPMENT



Proud of It!

And with good reason. A few years ago monster cast-iron pots like these were regarded as "unweldable". In out-of-the-way places they were allowed to accumulate and encumber the smelter yards, because of the expense of breaking them up and transporting them to a scrap market.

The reclamation of "lead pots" is now a standard practice—thanks to the oxy-acetylene process. The big fellow shown here is one of twenty-six 8-ton cast iron pots reclaimed by a large mining and concentrating company in the west.

Thus one more intricate and difficult puzzle has been solved by oxwelding. It is typical of what Oxweld Resident Engineers (located in over fifty cities) are daily doing for the metal industry. They are ready to work on YOUR cutting and welding problems—to point out economical short cuts, reclaim scrapped pieces, speed production. Send for illustrated book "Oxweld Can Do It".

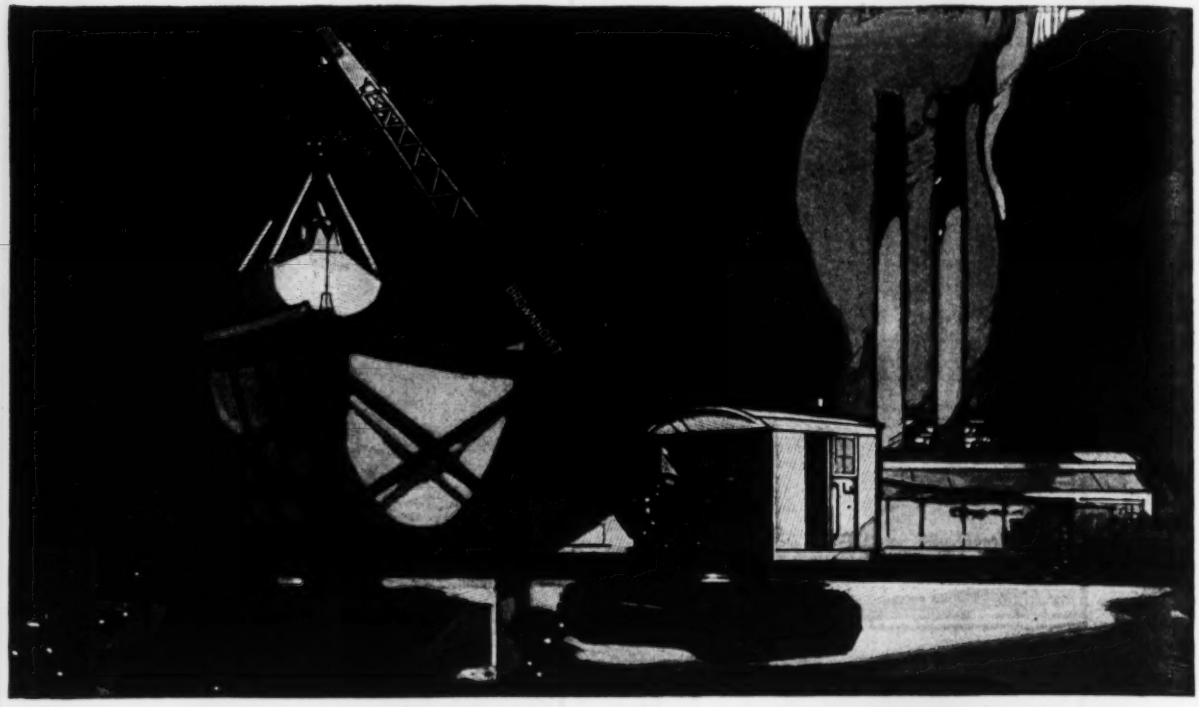
OXWELD ACETYLENE COMPANY

Newark, N. J. Chicago San Francisco

Oxweld

WELDING AND CUTTING APPARATUS

World's Largest Manufacturers of Welding and Cutting Equipment



No. 2 Brownhoist creeper truck crane equipped with 40 foot boom and Brownhoist one yard clamshell bucket

This Small Crane Will Cut Road Building Costs

Road Show

A moving picture showing approved methods of building roads in several states and also a No. 2 Brownhoist 8-wheel crane will be shown at the Road Show.

Small in size and low in cost, this No. 2 Brownhoist Locomotive Crane has a remarkable handling capacity. It handles a one yard Brownhoist clamshell bucket easily and rapidly. The forty foot boom provides a wide handling radius and increased clearance for loading into bins.

In road building, large savings can be effected by the use of this crane in the handling of sand, stone, gravel, etc. The No. 2 Brownhoist is made with creeper trucks and four or eight wheel railroad trucks—powered either by gasoline or steam engine.

These different types are built so as to provide the most economical crane for the individual requirements of each user. We'll be glad to help you choose the one best fitted for your job.

Literature and complete data on request

The Brown Hoisting Machinery Co., *Cleveland, O.*

Branch Offices: New York, Chicago, Pittsburgh, San Francisco, New Orleans

Products: Locomotive Cranes, Buckets, Storage Bins, Belt and Chain Conveyors, Etc.

BROWNHOIST

MATERIAL HANDLING EQUIPMENT

SEARCHLIGHT SECTION

OFFICIAL PROPOSALS

Copy: Official Proposals reaching our New York Office by 10 A. M., Tuesday can usually be printed in the issue out Thursday.

Rate:
40 Cents a Line an Insertion

Plans and Specifications for inspection by distant bidders may be filed at any of the Engineering News-Record offices without charge.

THESE ARE OFFICIAL NOTICES THAT BIDS ARE WANTED FROM BIDDERS EVERYWHERE

E.N.-R.

OFFICIAL PROPOSALS

Bids: Jan. 15.

Municipal Water Supply Improvement

Oklahoma City, Okla.

Sealed bids will be received by M. Peshek, Jr., City Clerk of the City of Oklahoma City, Oklahoma, up to 12.00 o'clock noon, Tuesday, January 15th, 1924, and a duplicate of each bid must be filed with the City Auditor of the said city, and will be opened and considered by the Board of Commissioners at 2.00 o'clock p.m., Tuesday, January 15th, 1924, for the construction of the following work for the improvement to the municipal water supply for the City of Oklahoma City, Oklahoma:

Section A—1—Ambursen Const. Co. plan—Main Dam Extension.
Section A—2—Ambursen Const. Co. plan—Intake.
Section A—3—Ambursen Const. Co. plan—Gates and Operating Mechanism, Main Dam Extension.
Section A—4—Ambursen Const. Co. plan—Steel Flashboards and Operating Mechanism—Intake.
Section B—1—V. V. Long & Co. plan—Main Dam Extension.
Section B—2—V. V. Long & Co. plan—Intake.
Section B—3—V. V. Long & Co. plan—Structural Steel Crest, Intake.
Section C—1—Callahan Const. Co. plan—Main Dam Extension.
Section C—2—Callahan Const. Co. plan—Intake.
Section C—3—Callahan Const. Co. plan—Gates and Operating Mechanism—Main Dam Extension.
Section C—4—Callahan Const. Co. plan—Gates and Operating Mechanism, Intake.
Section D—1—Holway Engr. Co. plan—Main Dam Extension.
Section D—2—Holway Engr. Co. plan—Intake.
Setion D—3—Holway Engr. Co. plan—Gates and Operating Mechanism—Main Dam Extension.
Section D—4—Holway Engr. Co. plan—Gates and Operating Mechanism—Intake.

Bids will be considered on each Section separately, and contractors may bid on any or all sections. All of the necessary work and materials used shall be in strict accordance with the plans and specifications therefor, now on file in the office of the City Clerk.

Each bidder shall accompany his bid with a sworn statement in writing that the bidder had not directly nor indirectly made any agreement, express or implied, with any other bidder or bidders, having for its object the controlling of the price or amount of such bid or bids, the limiting of the bidder or bidders, the parcelling or farming out to any bidder or bidders, or other persons, of any part of the contract, or any part of the subject matter of the bid or of the profits thereof, and has no knowledge of the amount, kind or character of any bid to be made by any other person, firm or corporation, except those submitted and filed by him.

The bid or bids filed with the City Clerk must be accompanied by a certified check on any national bank, in the sum of at least five (5%) per cent of the amount of the bid or bids.

It being further understood that the amount of damages which the City would suffer would be impracticable to determine and extremely difficult to fix in case the successful bidder should fail to enter into a contract and give the required bonds within the required time, it is therefore understood that by the filing of a bid or bids it will be considered as agreed that the amount of damages which the City would suffer by reason of such failure on the part of said successful bidder is the amount represented by the check or checks so filed by the successful bidder, and that the City shall have the authority to appropriate such checks for its own use and benefit in payment for such damages.

Each bidder shall agree to enter into a contract and furnish the required bonds within ten (10) days after the acceptance of his bid, and shall state in his bid when he will begin the work and when he will complete the same.

The contractor will be required to give bond in the sum of twenty-five (25%) per cent of the contract price for faithful performance of the work, and all other bonds that are required by the laws of the State of Oklahoma or the ordinances of said City, and to give bond to hold the City harmless from any and all damages for which the City might be liable under the law, and which might occur by reason of any act upon the part of the said contractor or of any of his employees.

A deposit of fifty ($50.00) dollars will be required for each set of plans and specifications. Such deposit will be refunded upon the return of the plans and specifications in good condition within 10 days after the bids are opened.

Each bidder is hereby notified that the Ambursen Co. plans, the V. V. Long & Co. plans, the Callahan Const. Co. plans and the Holway Engr. Co. plans are different plans for the same construction work and the City reserves the right to finally adopt for said work any one plan or any part of any plan.

The Board of Commissioners further reserves the right to reject any or all bids.

M. PESHEK, JR.,
City Clerk.

Bids: Jan. 8.

Fire Escapes

Sonyea, N. Y.

Sealed proposals for Construction—Fire Escapes, at Craig Colony, Sonyea, N. Y., will be received by Mr. Percy L. Lang, President, Board of Managers, Craig Colony, Sonyea, N. Y., until 2 o'clock p.m. on Tuesday, January 8, 1924, when they will be publicly opened and read. Proposal shall be enclosed in an envelope furnished by the State Architect, sealed and addressed and shall be accompanied by a deposit consisting of a certified check drawn upon some legally incorporated bank in this State and made payable to the State of New York, or money, equal to five per cent (5%) of the amount of the proposal. The contractor to whom the award is made will be required to furnish surety company bond in the sum of fifty per cent (50%) of the amount of contract within thirty (30) days after official notice of award of contract and in accordance with the terms of Specification No. 4182. The right is reserved to reject any or all bids. Drawings and specifications may be examined at Craig Colony, Sonyea, N. Y., at the Department of Architecture, 18th Floor, Fuller Bldg., Broadway and 23rd Street, and at the Department of Architecture, Capitol, Albany, N. Y. Drawings, specifications and blank forms of proposal may be obtained at the Department of Architecture, Capitol, Albany, N. Y., upon reasonable notice to and in the discretion of the State Architect, Sullivan W. Jones, Capitol, Albany, N. Y.

Dated: December 13, 1923.

OFFICIAL PROPOSALS

Bids: Jan. 18.

Dredging

ENGINEERING DEPARTMENT
PARISH OF CALCASIEU, LOUISIANA

Lake Charles, La.

December 15th, 1923.

Sealed bids will be received by the Police Jury of the Parish of Calcasieu, Louisiana, until noon, Friday, January 18th, 1924, in the Police Jury Room, Court House, Lake Charles, Louisiana, and then and there publicly opened, for the construction of a Navigation Channel 30 feet deep by 125 feet wide at the bottom, from Lake Charles to the Sabine River.

SECTION 3

The construction of a channel 30 feet deep and 125 feet wide at the bottom, from Station 714, East along the Intracoastal Canal, to Station 580. A distance of 2.54 miles. Approximately 2,020,000 cubic yards of earth to be moved.

This work is along the present Intracoastal Canal, which on this section, is 6 feet deep and 40 feet wide on the bottom. The Atlantic, Gulf and Pacific Dredging Company have a contract with the War Department to deepen and widen this part of the Intracoastal Canal to 12 by 90 feet; their dredge "TEXAS" is working about Station 760 at present, and will pass Station 714 going East between January 1st and 10th. From Station 714, East to Station 680, the land is marsh, elevation +1.0 to +2.0. The Gum Cove Ridge lies between Station 680 and 580, elevation +2.0 to +12.0. Average stage of water +1.2. All depths and elevations refer to Mean Low Gulf Datum.

SECTION 5

The construction of a channel 30 feet deep and 125 feet wide at the bottom, from Station 58 on the Intracoastal Canal, West to Station 322. A distance of 5 miles. Approximately 3,480,000 cubic yards of earth to be moved.

This work is along the present Intracoastal Canal, which has been deepened and widened from Station 58 to 120, to 12 feet deep by 90 feet wide on the bottom. From Station 120 to 322 the Canal is 6 feet deep by 40 feet wide on the bottom, with a Pilot cut from Station 176 to 322, 12 feet deep by 40 feet wide on the bottom, along the South side of the old ditch: The Government Dredge "BLACKWATER" is at present at Station 120 working West completing the Canal to 12 feet depth and 90 feet width. The Blackwater will probably pass Station 176 about February 1st. From Station 58 to 90 is a low Ridge; Elevation +2.0 to +7.0; from Station 90 to Station 322 is a Black Grass Marsh, with knolls; Elevation +1.0 to +3.0. Average stage of water +1.2. All elevations and depths refer to Mean Low Gulf Datum.

Every bid shall be accompanied by a certified check in an amount equal to five per cent (5%) of the amount of the bid, payable to the Treasurer of Calcasieu Parish, which check shall be forfeited to the Parish should the bidder to whom such contract is awarded fail to enter into the contract required within ten (10) days after notice to do so from the Police Jury of Calcasieu Parish.

The Police Jury reserves the right to reject any or all bids.

V. R. REEVES,
President, Police Jury.
FRED SHUTTS,
Parish Engineer.

OFFICIAL PROPOSALS

Bids: Jan. 17.

Excavation and Rock Protection

STATE OF NEW YORK
DEPARTMENT OF PUBLIC WORKS
BUREAU OF CANALS

Albany, N. Y.,
December 13, 1923.

Sealed proposals will be received by the undersigned at his office in Albany, N. Y., until twelve o'clock noon of Thursday, January 17th, 1924, at which place and hour they will be publicly opened and read, for improving the New York State canals pursuant to the provisions of Chapter 147 of the Laws of 1903, and of the acts amendatory thereof and supplementary thereto, and Chapter 570 of the Laws of 1915, as follows:

CONTRACT NO. 214.

Erie Canal—Section 9.

For completing the excavation of the canal channel in the Genesee river at Rochester and placing rock spoil protection along the river banks.

Sheets 1 to 3, inclusive.

Plans may be seen, and detailed specifications, engineers' estimates of quantities, proposal blanks, form of contract and bonds required and other information for proposers may be had at the office of the Bureau of Canals, Albany, N. Y.; at the office of the Division Engineer, Department of Public Works, at Utica, Syracuse, Rochester and Buffalo; and at the Terminal Warehouse, Pier 6, East River, New York City.

Blueprint copies of plans will be furnished by the State Engineer and Surveyor upon the receipt at his office in the Telephone Building, Albany, N. Y., of payment at the rate of fifteen cents (15c.) per sheet. Refund will not be made for any blueprints which may be returned.

Monthly estimates will be paid of ninety per centum (90 per cent) of the work done at the contract price. Every proposal for said work must be accomplished by a money deposit in the form of a draft or certified check upon some good banking institution in the city of Albany or New York, issued by a national or state bank, in good credit within the State and payable at sight to the Commissioner of Canals and Waterways for five per centum (5 per cent) of the amount of the proposal.

The person whose proposal shall be accepted will be required to execute a contract and furnish bonds within ten days from the date of notice of award delivered to him or them in person or mailed to the address given in the proposal.

Upon execution of the contract and approval of bonds the certified check or draft will be returned to the proposer unless the same shall have been presented for collection prior to such time in which case the amount of the deposit will be refunded by the Commissioner of Canals and Waterways.

The deposits of bidders other than the one to whom the award of contract shall be made will be returned immediately after the award has been made.

The bond required for the faithful performance of the contract shall be in such sum as shall be fixed by the Commissioner of Canals and Waterways, which sum shall not be less than twenty per centum (20 per cent) of the estimated cost of the work, according to the contract price, and an additional bond known as the labor bond, in the sum of ten per centum (10 per cent) of the amount of the estimated cost of the work, according to the contract price, will be required as security that the contractor will pay in full at least once in each month all laborers employed by him upon the work specified to be done in the contract.

In the event that more than one surety company is offered as surety on said bonds co-insurance only will be accepted.

Each proposal must be addressed to the Bureau of Canals, State Department of Public Works, Albany, N. Y., and must be endorsed on the envelope with the name of the construction for which the proposal is made.

Award, if made, will be made to the person or persons whose proposal shall be lowest in cost to the State for doing the work, and which shall comply with all provisions required to render it formal. Before any award shall be made the lowest bidder will be required to satisfy the Commissioner of Canals and Waterways of his ability to provide suitable equipment and materials for the proper performance of the work.

The right is reserved to reject all proposals and readvertise and award the contract in the regular manner if, in the judgment of the undersigned, the interests of the State will be enhanced thereby.

ROYAL K. FULLER.
Commissioner of Canals
and Waterways.

Bids: Jan. 3.

Railroad Siding, Relocating Electric Railroad and Bridge

Kansas City, Mo.

Sealed proposals will be received by the Purchasing Agent of Kansas City, Missouri, at the office of the Purchasing Agent, Second Floor, City Hall, until 2 oclock p.m., January 3, 1924, for furnishing the labor and materials for the grading for a railroad siding about three-fourths of a mile long, and a relocated electric railroad and highway about four-fifths of a mile long including a reinforced concrete highway bridge, span 16 feet, width 18 feet, located just north of North Kansas City. The proposals shall be in accordance with drawings and specifications on file in the office of the Board of Fire and Water Commissioners of Kansas City, Missouri, of Fuller and Maitland, Engineers for the Board of Fire and Water Commissioners, 600 Walnut Street, Kansas City, Missouri, and of Fuller and McClintock, 170 Broadway, New York City. Copies of the drawings and specifications may be obtained from Fuller and Maitland, 600 Walnut Street, Kansas City, Missouri, upon the deposit of $10.00 for each set, which deposit will be refunded provided the drawings and specifications are returned in good condition within 30 days after bids are received.

Each bidder shall deposit with the City Comptroller a certified check on a solvent bank or trust company in the amount of five thousand dollars ($5,000), payable to the City Comptroller of Kansas City, Missouri, and accompany his bid with the Comptroller's receipt therefor. The said certified check is required as a guarantee that the bidder will, within ten (10) days after receiving the award of the contract, file with the City a satisfactory bond to the amount of fifty per cent of the bid price, and will execute the contract.

The Board of Fire and Water Commissioners does not bind itself to accept the lowest or any bid offered, and reserves the right to reject any or all bids, and to waive any irregularity or informality in the bids.

MARTY H. RAMING,
Purchasing Agent.
FULLER AND MAITLAND,
Engineers.
By Authority of the Board of Fire and Water Commissioners.

Bids: Feb. 4, 1924.

University Buildings

Urbana, Ill.

Sealed proposals for General Work on four buildings to be erected for the University of Illinois in Urbana, Illinois, will be received at the office of James M. White, Supervising Architect, 256 Administration Building, Urbana, up to 2:00 p.m., Monday, February 4, 1924.

Bidders interested should write the Supervising Architect immediately for information as to type and size of buildings and dates when plans will be available.

OFFICIAL PROPOSALS

Bids: Jan. 3.

Sewer Construction

McKenzie, Tenn.

Sealed bids for the construction of a vitrified pipe sewer system and settling tanks for the City of McKenzie will be received by the Mayor and City Council at the office of H. C. Bryant, City Clerk until 2 p.m., January 3, 1924, at which time and place they will be opened and publicly read.

The approximate quantities are as follows:

38,506	Lineal feet 8" Sewers
4,620	Lineal feet 10" Sewers
900	Lineal feet 12" Sewers
1,650	Lineal feet 15" Sewers
134	Manholes
12	Flush Tanks
588	Lineal feet vertical risers
2	Reinforced concrete settling tanks

Plans and specifications may be examined at the office of H. C. Bryant, City Clerk, at McKenzie, or at the office of the Engineer, or a copy may be obtained from the Engineer upon receipt of a deposit of $15.00, of which amount $10.00 will be refunded when the plans and specifications are returned in good condition. If additional information is required, address the Engineer.

The right is reserved to reject any and all proposals and to waive informalities. The contractor will be paid cash on monthly estimates amounting to 85% of the work done.

All proposals and bids must be accompanied by a certified check drawn on a responsible bank or trust company, and made payable to H. C. Bryant, City Clerk, for a sum of not less than 5% of the amount of the proposal; or a bidders bond for the same amount by a surety company authorized to do business in the State of Tennessee, will be accepted. The successful bidders will be required to furnish a performance bond in the sum of 50% of the contract price.

December, 1923. H. C. BRYANT,
City Clerk.

B. H. KLYCE, Engineer,
506 4th and 1st Natl. Bank Bldg.,
Nashville, Tenn.

Bids: Jan. 19.

Pipe Line, Tunnel, Dam, Etc.

Charlottesville, Va.

Sealed proposals will be received by the City Manager at his office, Charlottesville, Va., until 11 o'clock a.m., January 19th, 1924, for the construction of approximately 12 miles of 18 inch Cast Iron Pipe Line and 700 lineal feet of 4 x 6 Tunnel, a Diversion Dam, Grit Chamber and Regulating works. Pipe and Specials will be furnished by the City of Charlottesville, f.o.b. cars. Plans and Specifications can be seen on or after January 1, 1924, at the office of the City Manager, Charlottesville, Va., and at the offices of the Engineers, Fuller and McClintock, 170 Broadway, New York City, or Lee H. Williamson, National Bank Building, Charlottesville, Va. Proposal blanks will be forwarded upon application to the City Manager. Construction Bond to the amount of the contract will be required and each proposal must be accompanied by a certified check for $10,000.00.

Arrangements for inspection of the line can be made at the office of Lee H. Williamson, National Bank Building, Charlottesville, Va.

The right is reserved by the City Manager to reject any or all bids.

BOYD A. BENNETT,
City Manager
City of Charlottesville, Va.

Hauling Contracts Wanted

Road work, Material Handling, etc. Have several fleets of trucks ready for service anywhere. No job too large. Special equipment for any kind of dump truck hauling or unloading. Unlimited references. Glad to estimate.

HAMBRIDGE CONTRACTING CO.
68th and Greenway Ave., Philadelphia, Pa.

CONTRACT BONDS FOR RESPONSIBLE CONTRACTORS

Treat your bonding company as you do your banker; both help you with the CREDIT you require.

ÆTNA CASUALTY AND SURETY COMPANY
HARTFORD, CONN. AGENTS EVERYWHERE

OFFICIAL PROPOSALS

Bids: Jan. 15.

Construction of Flood Control Works

OFFICE OF THE BOARD OF DIRECTORS
THE PUEBLO CONSERVANCY DISTRICT

Pueblo, Colo.

Dec. 17, 1923.

Sealed proposals will be received by The Pueblo Conservancy District, Pueblo, Colorado, until 2 o'clock, p.m., on Tuesday, January fifteen, 1924, for the construction of a relocated river channel and the relocation of 35 miles of railroad yard tracks in Pueblo, also a barrier dam 6 miles west of Pueblo, involving approximately the following principal quantities divided into contracts as follows:

No. 1. Channel Excavation above Santa Fe avenue; material used in Railroad Yard and Levee Fills.
Upper railroad fill.....464,000 Cu.Yds.
Lower railroad fill ..... 90,000 Cu.Yds.
Levees .....486,500 Cu.Yds.

No. 2. Concrete Levee Paving.
Steel sheet piling .....74,400 Sq.Ft.
Concrete slab revetment ....26,600 Cu.Yds.

No. 3. Railroad Track Construction below Dry Creek Bridge.
Track laying and surfacing .....26.47 Mi.
Alterations to tracks..... 3.53 Mi.
(Rails and ties to be furnished to Contractor.)

No. 4. Channel Excavation, below Santa Fe avenue, 54,000 Cu.Yds.

No. 6. Concrete Intake Structure, Reinforced concrete, 350 Cu.Yds., Reinforced concrete pipe, 48" Diam., 808 lin.ft.

No. 7. Retaining walls in Levee at Round House and at Union Depot, concrete, 1,985 Cu.Yds.

No. 8. Dyke below Santa Fe avenue, 6,000 Cu.Yds.

No. 9. Dykes at Dry Creek, 25,000 Cu. Yds.

No. 10. Dykes at North Side Water Works Reservoirs, 55,000 Cu.Yds.

No. 12. Railroad Track Removal, Removing and storing track materials, 32 miles.

No. 13. Railroad Embankment above Dry Creek. Embankment, 130,000 Cu.Yds.; Riprap, 1,600 Cu.Yds.

No. 14. Railroad Track Construction above Dry Creek. Track laying and surfacing, 3.86 miles. (Rail and ties to be furnished to Contractor.)

No. 17. Concrete Culvert, North Side Water Works. Reinforced concrete, 139 Cu.Yds.; Timber flume, 60 MBM.

No. 18. Concrete Culvert, South Side Water Works. Reinforced concrete, 64 Cu. Yds.; Timber flume, 16 MBM.

No. 21. Upper Railroad Bridge, Substructure; concrete, 2,000 Cu.Yds.

No. 22a. Upper Railroad Bridge, Superstructure, 4-100 foot double track, through riveted truss spans. Structural steel, fabrication and delivery, 1,750,000 lbs.

No. 22b. Upper Railroad Bridge, Superstructure, 4-100 foot double track through riveted truss spans. Structural steel, erection, 1,750,000 lbs. Deck timber, 80 MBM.

No. 23. Concrete Railroad Bridge at Dry Creek, Reinforced concrete through girders. Reinforced concrete, 4,800 Cu.Yds.

No. 30. Lower Railroad Bridge, Substructure, Concrete, 2,920 Cu.Yds.

No. 31a. Lower Railroad Bridge, Superstructure. 2-200 foot double track through riveted truss spans, skewed. Structural steel, fabrication and delivery, 2,500,000 lbs.

No. 31b. Lower Railroad Bridge, Superstructure. Structural steel, erection, 2,500,000 lbs.; deck timbers, 80 MBM.

No. 32. Santa Fe Avenue Highway Bridge, Substructure. Concrete, 325 Cu.Yds.; Steel tubes for cylinder piers, 4.

No. 33a. Santa Fe Avenue Highway Bridge, Superstructure, 1-280 foot through riveted highway span. Structural steel, fabrication and delivery, 615,000 lbs.

No. 33b. Santa Fe Avenue Highway Bridge, Superstructure. Structural steel, erection, 615,000 lbs.; Deck timber, 50 MBM.

No. 34. Rock Canyon Barrier, Embankment. Earth fill, 90,000 Cu.Yds.

No. 35. Rock Canyon Barrier, Concrete, Plain concrete, 5,000 Cu.Yds.; Reinforced concrete, 7,328 Cu.Yds., which works are a part of the system of flood control and stream elimination for The Pueblo Conservancy District, to be carried out under authority of The Conservancy Act of Colorado, and are in accordance with the Official Plan of the District.

The contracts will include, in addition to the principal quantities given, incidental work, such as excavation, backfill, track material, etc. Cement reinforcing steel and track material will be furnished to the Contractor. Other contracts necessary for the completion of the project have been deferred.

Proposals must be on the blank forms furnished by the Board, and must be accompanied by a certified check for not less than 5 per cent of the aggregate amount of the bid, figured on the basis of the estimated quantities and the unit prices bid, but which in no case shall be less than $1,000 or need be more than $50,000, such check to be drawn to the order of The Pueblo Conservancy District, as a guarantee that the bidder, if awarded a contract, will, within 15 days after the contract is delivered to him for that purpose, execute the same and furnish surety bond for the faithful performance of the contract in the sum of 55 per cent of the contract price; said contract and bond to be on the standard forms adopted by the Board. A bidder submitting alternative bids may furnish a single certified check covering the largest amount required by any alternative.

If any bidder, to whom an award has been made, shall fail to execute the contract or to furnish satisfactory bond within the time hereinbefore specified, or as extended by the Board, the award shall thereupon become void, in which case the proceeds of the certified check shall become the property of the District, and the contract may be awarded to the next lowest or best bidder; and such next lowest or best bidder shall thereupon assume the contract, as if he were the party to whom the award was first made.

Each bidder must, in his proposal, present satisfactory evidence that he has been engaged in constructing works of the general character covered by his proposal, and that he is fully prepared, and has the necessary capital, to begin the work promptly, and to conduct it as required by the contract and specifications.

The right is reserved to reject any or all bids, and to waive any technical defects, as the interests of the District may require.

Drawings, specifications, proposal blanks, and other information may be obtained on application to the Chief Engineer, The Pueblo Conservancy District, Pueblo, Colorado, at whose office drawings, borings and other data may be inspected. This information is now on file for examination and will be ready for mailing on or before January first. Specifications, drawings, sample blank forms and proposal forms covering any one contract will be furnished for $1.00, or all contracts for $15.00.

Bids should be sealed and marked "Bid on Pueblo Conservancy Contract," and inclosed in an envelope addressed to Chas. W. Lee, Room 740, First National Bank Bldg., Pueblo, Colorado, or presented in person at the time of the letting. Bids will be opened by the Board, in the Council Chamber, at the City Hall, Pueblo, at 2 p.m., Tuesday, January 15, 1924.

Done this 17th day of December, 1923, at Pueblo, Colorado, pursuant to resolution of the Board of Directors of The Pueblo Conservancy District.

E. D. SPRUILL,
Secretary.

Bids: Jan. 16.

(READVERTISEMENT)

Delaware River Bridge

CONTRACTS NOS. 9A, 9B, 9D, 10A & 10B
DEMOLITION

Philadelphia, Pa.

Sealed proposals for the demolition and removal of the buildings on the site of the Philadelphia approach between Front Street and Third Street, and between Fourth Street and Sixth Street, and the buildings on the site of the Camden Approach between Delaware Avenue and Fourth Street, will be received by the Delaware River Bridge Joint Commission at Room 806, Widener Building, Philadelphia, Pa., until 2:30 o'clock p.m., January 16, 1924, when they will be publicly opened and read. The contracts will be awarded, or all bids rejected, within fourteen days after bids are opened. The right is reserved to reject any or all bids.

Separate bids are asked for each of three sections of the Philadelphia Approach, and each of two sections of the Camden Approach. The work includes the demolition and removal of structures and certain other work incidental thereto. The work under Contracts 9A, 9B, 10A and 10B, is to be completed in three months, and that under 9D in six months.

Bids must be made upon the blank proposal forms, which together with specifications, bond and contract form, and contract drawings, may be obtained at the office of the Joint Commission, upon deposit of $10.00, which deposit will be refunded upon receipt of bid or upon the return in good condition of the copies so taken.

Each proposal must be accompanied by a certified check for Three Thousand Dollars, drawn upon a national or state bank or trust company having an office either in Philadelphia or Camden, and payable to the Delaware River Bridge Joint Commission, and surety's consent must be shown. The bidder or bidders to whom the contract for each section is awarded will be required to give bond in the sum of fifty per cent of the amount of such contract, but not less than $25,000.

Delaware River Bridge Joint Commission.
GIFFORD PINCHOT,
Chairman.
JOSEPH K. COSTELLO,
Secretary.

Bids: Jan. 29.

Street Paving

Baton Rouge, La.

Sealed bids will be received by the Commission Council, Baton Rouge, La., until 11:00 A.M., Jan. 29th, 1924, for paving sixteen streets. Bids will be received upon Asphaltic Concrete, Brick, Sheet Asphalt, and Warrenite Bitulithic, all on concrete base.

Approximate Quantities:
102,269 sq.yds. surfacing and base.
20,311 lin.ft. straight curb and gutter.
3,327 lin.ft. header curb.
585 lin.ft. circular curb and gutter.
3,970 lin.ft. drain pipe, 10 inch.
2,945 lin.ft. drain pipe, 12 inch.
150 lin.ft. drain pipe, 15 inch.
140 lin.ft. drain pipe, 18 inch.
56 catch basins.
3 manholes.
2,180 lin.ft. stone header.
27,680 cu.yds. excavation.

Plans and specifications are on file in the office of the Consulting Engineer, City Hall, Baton Rouge, La. Copies may be had upon payment of fifteen dollars, which will not be returned.

A certified check, or bidder's bond, for 5% of amount bid, payable to the Commissioner of Finance, City of Baton Rouge, must accompany each bid. The right is reserved to reject any and all bids.

J. W. BILLINGSLEY,
Consulting Engineer.

Ask Your Wife—She Knows

Put on a sale of anything where either the price is reduced or the quantity and quality increased and there will be an athletic response by the women. They know values. Just say this to your wife: "All insurance costs the same but some brokers give greater value by intelligent investigation that either increases the coverage or reduces the premium. Which is the better buy?" Then when she gives you her answer telephone Swart for information regarding an investigation that won't cost you a dime and will prove that

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Insurance Advisor *Rate Specialist*

92 Williams Street, New York City

OFFICIAL PROPOSALS

Bids: Jan. 10.

Land Dredge

OFFICE OF THE COMMISSIONERS OF CHATHAM COUNTY AND EX-OFFICIO JUDGES

Savannah, Georgia.

December 13, 1923.

Sealed proposals will be received by the Commissioners of Chatham County and ex-officio Judges until the 10th day of January, 1924, at 12:30 o'clock p.m., and publicly opened by them at their office at that time for furnishing the County with One (1) Internal Combustion Land Dredge equipped with not more than three-quarter cubic yards capacity bucket, operated by at least fifty horse power Internal Combustion Engine. The machinery must be so designed as to dig new ditches and also to clean out those already dug.

Bidders will be required to submit with their bids specifications to the minutest detail of the machinery they propose to furnish, giving full weight of machine, length of boom, turning radius, compression per square inch on Caterpillar Tractors, and the total load on hoisting cable at different elevations of the boom, with guarantee of cost of operation, etc., and must also state at what place similar machinery to that bid on is in operation.

Proposals must be accompanied by a certified check, money deposit or bidder's liability bond, payable to the Commissioners of Chatham County, in an amount equal to 5 per cent of the amount of the total bid, to insure the succesful contractor delivering the machinery bid on and at the time he agreed to deliver the same.

TIME OF PAYMENT: The successful bidder will be paid on the 15th of the following month after delivery and acceptance of the machinery by the County Commissioners, by a warrant on the County Treasurer to be paid when in funds. Said warrent when presented to and stamped by the County Treasurer will bear interest at the rate of 7 per cent from the time of said presentation and stamping until paid.

The right is reserved to reject any or all bids and to waive all formalities.

By order of:

COMMISSIONERS OF CHATHAM COUNTY AND EX-OFFICIO JUDGES.

G. REUBEN BUTLER,
Clerk. (L. S.)

Bids: Feb. 5.

Sewers

Baton Rouge, La.

Sealed bids will be received by the Commission Council of Baton Rouge, La., at the City Hall, until 11:00 A.M., Feb. 5th, 1924, for constructing certain Sanitary Sewers and appurtenances in the City of Baton Rouge.

Approximate Quantities:
2,100 lin.ft. 10 inch V. C. Pipe.
2,500 lin.ft. 24 inch V. C. Pipe.
520 lin.ft. 36 inch Cast Iron Pipe through levee.
17 Manholes.

Plans and specifications on file in the office of the Consulting Engineer, City Hall, Baton Rouge. Copies may be had upon payment of $7.50, which will not be returned.

A certified check, or bidder's bond, for $3,000.00, payable to the Commissioner of Finance, Baton Rouge, must accompany each bid. The right is reserved to reject any or all bids.

J. W. BILLINGSLEY,
Consulting Engineer.

Bids: Jan. 14.

Filtration Plant

North East, Pa.

Sealed proposals will be received up to eight o'clock p.m., Monday, January 14, 1924, at the Council Rooms of the Borough of North East, Pa., for the construction of a rapid sand filtration plant, complete, consisting of two units of a capacity of 600,000 gallons daily. Plans and specifications may be seen at the office of the Boro Engineer or of the Boro Secretary. A deposit of $10.00 will be required for each set of plans given out, to be refunded when contract is awarded and plans returned. All bids must be accompanied by a certified check for 5 per cent of the amount of bid and the right to reject any or all bids is reserved.

J. N. LEET,
Secretary.

OFFICIAL PROPOSALS

Bids: Jan. 17.

Double-Deck Bridge and Approach

New Orleans, La.

Sealed proposals will be received by the Board of Commissioners of the Port of New Orleans, at their office, Suite 200, New Court Building, until 3:00 P.M., Thursday, January 17, 1924, and then publicly opened for contracts in connection with the construction of a double-deck bridge and approach span, containing about 213 tons of structural steel, operating machinery and trim, for the ferry landing at the foot of Canal Street, New Orleans, La., as follows:

Requisition E. D. 14393—Under one contract.
Furnishing structural steel for ferry bridge with or without erection of bridge, of machinery and of trim.

Requisition E. D. 14394—Under one contract.
Erection of ferry bridge, of machinery and of trim.

Requisition E. D. 14395—Under one contract.
Furnishing ferry bridge machinery.

A deposit of $1,000 in cash or certified check is required with the proposal to cover the first requisition and $400 in cash or certified check with each of the other proposals.

A bond to the amount of fifty per cent (50%) of the sum bid will be required with each notarial contract signed.

Specifications and proposal forms are on file in the office of the Supervisor of Purchases, at No. 1 Canal Street, New Orleans, Louisiana. Complete sets for each proposal will be furnished to prospective bidders on deposit of $10 for each set, which will be refunded to depositors who submit proposals or return sets in good condition.

The right is reserved to reject any or all bids and to waive informalities.

J. H. WALSH,
General Manager.

Bids: Jan. 30.

42 in.—48 in. and 60 in. Intercepting Sewers, Sewage Pumps, and Sewage Disposal Plant Improvements

Fostoria, Ohio.
December 24th, 1923.

Sealed proposals for the construction of 42" 48" and 60" Intercepting Sewers and Pumping Machinery, Superstructures, Grit Chamber, Sludge Beds, and other improvements to the Sewage Disposal Plant, will be received by the City of Fostoria, Ohio, until 2 o'clock p.m., Eastern Standard Time, on the 30th day of January, 1924, and will then be publicly opened and read.

Official Proposal Blanks, Instructions to Bidders, Specifications, Form of Contract and Bond may be seen at the office of the Director of Public Service, Fostoria, Ohio, or one (1) copy of plans and specifications may be obtained by bona fide bidders upon application to The J. N. Chester Engineers, Union Bank Building, Pittsburgh, Pa., or to the City of Fostoria, Ohio, and deposit of Twenty-five Dollars ($25.00), which amount will be refunded to bidders on receipt of a bona fide bid, or upon the return within thirty (30) days after receipt of bids, of both plans and specifications, in good order.

The right is reserved to reject any or all bids.

JAMES MANECKS,
Director of Public Service.

THE J. N. CHESTER ENGINEERS,
Union Bank Building,
Pittsburgh, Pa.

Bids: Jan. 11.

Viaduct and Retaining Wall

Seattle, Wash.

Sealed proposals will be received by The Seattle Board of Public Works up to 10 o'clock a.m., January 11th, 1924, for the construction of a concrete viaduct and retaining wall on West Spokane Street. Approximately 2400 cubic yards excavation, 4600 cubic yards concrete and 650,000 pounds reinforcing steel will be used with all necessary drainage and lighting.

Plans and specifications may be obtained of the City Engineer upon the payment of $10, which will be refunded if the plans are returned in good condition.

J. D. BLACKWELL, City Engineer.

OFFICIAL PROPOSALS

Bids: Jan. 24.

Storm Drainage

Baton Rouge, La.

Sealed bids will be received by the Commission Council of Baton Rouge, La., at the City Hall, until 11:00 A.M., Jan. 24, 1924, for constructing certain storm drains in the City of Baton Rouge. The work will be let in three contracts, the Goose Hollow, Saint Philip, and Roseland Terrace Canals.

Combined Approximate Quantities:
4,250 cu.yds. Class "A" Concrete.
384,000 lbs. Reinforcing Steel.
650 lin.ft. Pipe.
16 Manholes.

Plans and specifications are on file in the office of the Consulting Engineer, City Hall, Baton Rouge, La. Copies may be had upon payment of ten dollars, which will not be returned.

A certified check, or bidder's bond, for five thousand dollars, payable to the Commissioner of Finance, City of Baton Rouge, must accompany each bid. The right is reserved to reject any and all bids.

J. W. BILLINGSLEY,
Consulting Engineer.

Bids: Jan. 10.

Water Main

Norfolk, Va.

Sealed proposals for relaying a 16-inch water main will be received at the office of the Director of Public Works, Norfolk, Virginia, until 12 o'clock noon, January 10, 1924, at which time and place they will be publicly opened.

The work includes taking up 22,000 feet of a present 16-inch main, hauling to the new location, and relaying same, together with necessary valves, hydrants and fittings, with cross-connections to small existing mains.

Plans, specifications, form of proposal, contract and bond may be obtained at the above office upon deposit of $10.00, which will be refunded when plans and forms are returned.

A certified check on a Norfolk or other acceptable bank in the sum of Five Hundred ($500.00) must accompany each bid. The right to reject any or all bids is reserved.

WALTER H. TAYLOR, 3RD,
Director of Public Works.

U. S. GOVERNMENT

U. S. ENGINEER OFFICE, Milwaukee, Wis. Sealed proposals will be received here until 3 p.m., Jan. 16, 1924, and then opened, for constructing steel dump scows and barge. Further information on application.

U. S. ENGINEER OFFICE, 250 Old Land Office Building, Washington, D. C. Sealed proposals will be received here until 12 M January 15, 1924, and then opened, for the construction of the Filtration Plant and Pumping Station substructures for the District of Columbia water supply project. Further information on application.

U. S. ENGINEER OFFICE, P. O. Box 72, Louisville, Ky. Sealed proposals will be received here until 2 p.m., central time, Jan. 3, 1924, and then opened, for furnishing, delivering and erecting gates for Lock No. 45, Ohio River. Further information on application.

U. S. ENGINEER OFFICE, P. O. Box 72, Louisville, Ky. Sealed proposals will be received here until 2 p.m., central time, December 29, 1923, and then opened, for furnishing and delivering Metal Work for Dams Nos. 44 and 45, Ohio River. Further information on application.

U. S. ENGINEER OFFICE, Cincinnati, Ohio. Sealed proposals for furnishing, delivering and erecting gates for Lock No. 34, Ohio River, will be received here until 11 a.m. January 19, 1924, and then opened. Information on application.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., Dec. 20, 1923. Sealed proposals will be opened in this office at 3 p.m., Jan. 21, 1924, for the construction, including mechanical equipment, of a one story brick and tile non-fireproof Post Office building, approximately 62 x 64 feet in size at State College, Pa. Drawings and specifications may be obtained from the Custodian of the site at State College, Pa., or at this office in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect.

POSITIONS VACANT

AN experienced structural steel detailer wanted to do detailing and estimating. Location West of Mississippi River. P-254, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

DRAFTSMEN and checkers, experienced in making shop drawings for structural steel work. Good opportunity for competent men. Apply Whitehead & Kales Co., Detroit, Mich.

EXPERIENCED architectural and structural designer and draftsman. Only technical graduates, thoroughly familiar with building codes need apply. State age, availability and salary. P-272, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

ESTABLISHED construction company doing general building construction, requires the services of an experienced estimator. State experience and salary expected in first letter. Communications confidential. Address P-176, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

LEVELERS and rodmen for work on subway construction, New York City; entrance salary $1,501 per annum, with opportunities for advancement; open to graduates in civil engineering or those with at least one year's satisfactory practical experience; citizens only; apply giving full information as to education and experience to Chief Clerk, Transit Commission, 49 Lafayette Street, New York City.

PUMP draftsman: Large mid-west manufacturer has opportunity for man familiar with centrifugal, steam and power pumps. Must be good detailer and thoroughly familiar with material lists. Good opportunity for young, energetic pump man. Location Michigan. P-251, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

SEVERAL experienced bridge designers for highway work wanted; must be good draftsmen. Give complete statement of education and experience, age and nationality. Submit sample of drafting. State salary. P-229, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

STRUCTURAL engineers wanted for designing structural steel factory and mill buildings; also for designing reinforced concrete buildings; state experience in full detail and salary expected. P-245, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

STRUCTURAL engineer, experienced in truss, general steel, design and drafting; give full particulars as to training previous positions age and salary expected. Asbury Bridge & Iron Works, Asbury Park, N. J.

STRUCTURAL engineer wanted, experienced in estimating and detailing, one with sales experience preferred. State experience, also salary expected in first letter. Southern Ohio territory. P-275, Eng. News-Record, Leader-News Bldg., Cleveland, Ohio.

STRUCTURAL steel and railroad bridge draftsman wanted. State age, nationality, education, experience in full, salary expected aand date you can report for work. Address P. G. Lang, Jr., Engineer of Bridges, Baltimore and Ohio Railroad Company, Baltimore, Md.

SUPERINTENDENT to take charge of a sand and gravel dredging plant. Must understand the operation of floating derricks having clam-shell buckets and hoisting sand and gravel out of beach. Must be familiar with the construction and operation of a screening plant and the loading of scows. Location, forty miles from New York on Long Island. State age, experience and salary expected. P-186, Eng. News-Record, 10th Ave. at 36th St., New York.

WANTED (at once) structural draftsman. Only first-class men need apply. Apply Bethlehem Construction Company, Bethlehem Trust Bldg., Bethlehem, Pa.

WANTED: The Blaw-Knox Company has an opening for a young civil engineer interested in being trained for sales work. This is a good opportunity. Construction experience necessary, particularly in highway and concrete construction. Sales experience desirable but not essential. Write your story completely, with references in first letter, to Blaw-Knox Company, attention Sales Manager, P. O. Box 915, Pittsburgh, Pa.

WANTED, writer in civil engineering subjects; must be a college graduate with experience in railroad surveying and construction; position requires residence in Eastern city of 150,000. State education and experience, also initial salary expected in first letter. New York or Philadelphia interview. P-248, Engineering News-Record, 10th Ave. at 36th St., New York.

WE need a Surveyor who is experienced in the relocation of city and country property lines from descriptions by metes and bounds and who not only can keep, but is in the habit of keeping, full and complete notes of all he does. He need not be an engineer, though training as an engineer would not disqualify. We are not advertising for students. We want someone who can deliver the goods. Please do not reply to this ad unless you can fill the bill and are dependable, accurate, sound in wind and limb, and intend to stick. If you do answer, state age, education, experience, least salary considered, and date available. Box 796, Asheville, N. C.

WE require the services of an engineer-surveyor who is familiar with the following branches of work: relocation of property corners from descriptions by metes and bounds; stadia, road and sewer location and construction; topography, drafting, etc. Judgment in the first named branch is an important item. Please do not answer this ad unless you can fill the bill and are accurate, dependable, healthy and intend to stick. We do not want a rolling stone, as this will be a permanent job for the right man. If you do answer, state age, education, experience, least salary considered and date available. Brown & Gibbs, Asheville, N. C.

Notice to Advertisers!

Owing to the holiday—New Year's Day—the *"Searchlight"* pages of the January 3rd issue of *Engineering News-Record* will close for press earlier than usual. Copy should reach us as follows:

Display Ads—Copy required by 10 A.M., Saturday, December 29th.

Want Ads—Copy required by Noon, Saturday, December 29th.

Proposal Ads—Copy required by 5 P.M., Monday, December 31st.

WILSON COURSES (*By Mail*)

"Engineer Makers" is what one enthusiastic student calls these courses; another student asks, "Isn't there some way of letting more draftsmen know about your courses"? "Thousands of good men are looking for just such practice work as you give in these courses, and they don't know where to find it."

We want to reach every technical graduate who needs **Experience** and every other man who has some knowledge of mathematics to start with; we have trained thousands in our 12 years of business and we invite communication with every man in the profession, regardless of age, who needs to modernize his methods, or get experience, or who is not satisfied with his present position through lack of confidence in his ability.

Reinforced Concrete Designing; Steel Designing; Bridges, Estimating a part of every course.

FREE literature; write for it TODAY

New Prep. Course for Non-technical Men

WILSON ENGINEERING CORPORATION

10 Broadway, Hanover, Mass.

EMPLOYMENT SERVICE

SALARIED men seeking tentative offers of new connections, are invited to communicate confidentially with the undersigned, who will negotiate overtures without jeopardy to present connections. A professional, ethical service, restricted to high grade positions; established 1910. Our "Refund Contract" guarantees refund of retaining fee to the client named therein, if service is not satisfactorily rendered and refund be requested within three months from date remitted. Send name and address only for particulars. R. W. Bixby, Inc., 701 Lockwood Building, Buffalo, New York.

EXECUTIVES, engineers and other qualified men whose salary requirements are over $2,500 per year, find our confidential direct service to specific employers extremely satisfactory. An inquiry entails no obligation. The National Business Bourse, Inc., H. H. Harrison, President, Association Building, Chicago.

EMPLOYMENT AGENCIES

GENERAL ENGINEERING AGENCY, Monongahela Bank Building, Pittsburgh, Pa. Supply employers everywhere, freely, prepared proposals available plant managers, superintendents, chief engineers, designers, draftsmen, transitmen, office clerks. Power engineers, electricians, master mechanics for every purpose, individuals or groups. General registration, no registration fees. We send men to Canada, Mexico, Central and South America.

NATIONAL CLERICAL BUREAU — Wisconsin's only technical agency offers special opportunity to technical men to locate in Milwaukee and vicinity where diversified industries assure both opportunity for advancement and steady employment. No advance fee. Loan & Trust Building, Milwaukee, Wis.

WANTED—Teachers engineering subjects. Draftsmen, mechanical, structural, architectural and civil engineering work. Recent graduates for various engineering opportunities. Cleveland Engineering Agency, Rose Bldg., Cleveland, Ohio.

POSITIONS WANTED

Civil Engineers

CIVIL engineer, age 31, ten years' experience, highway location and construction, railroad location, construction, tunnel driving, industrial construction surveys, reports, estimates. Desires permanent position with chance of advancement through meritorious service. At present employed as resident engineer but available on short notice; location immaterial. PW-244, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

CIVIL engineer, 20 years' experience, Mexico and West Indies. Railroads, surveys and construction; wharves and harbor improvements, highways, streets and sewers. Excellent record as sales engineer. Speaks and writes Spanish fluently. Available on short notice, PW-279, Eng. News-Record, 10th Ave. at 36th St., New York.

CIVIL and mining engineer, perfect knowledge of Spanish and Spanish American countries, desires representation of manufacturing, industrial or engineering firm in Chile, Peru, Argentine and Bolivia. PW-269, Eng. News-Record, 10th Ave. at 36th St., New York.

POSITIONS WANTED

ENGINEER, C. E., structural steel and concrete design, ten years on first class hotels, office buildings, theatres and industrial plants. PW-257, Eng. News-Record. 10th Ave. at 36th St., New York.

JUNIOR civil engineer, married, varied field and office experience. PW-240, Engineering News-Record, 10th Ave. at 36th St., New York.

RECENT graduate civil engineering (24) desires connection in any engineering capacity offering experience and advancement; four months on outside building construction work and seven months' structural and topographical drafting experience; prefer location in New York City or vicinity. PW-266, Eng. News-Record, 10th Ave. at 36th St., New York.

Surveyors

TRANSITMAN—Inspector, varied field and office experience, desires change. PW-239, Eng. News-Record, 10th Ave. at 36th St., New York.

TRANSITMAN desires position. West Coast preferred. University training and four years' experience in office and field. PW-273, Eng. News-Record, 883 Mission St., San Francisco, Cal.

Bridge and Structural

STRUCTURAL engineer, with eighteen years' designing and construction experience of structural steel and reinforced concrete structures, is open for engagement; South preferred. Engineer, 108 West Harris St., Savannah, Ga.

STRUCTURAL steel estimator and contracting engineer. Twelve years experience, designing, estimating and selling structural steel, reinforcing steel and allied products. Can take complete charge of any structural job and handle it throughout all branches of fabricating shop. Financially responsible, open for engagement after February 1st with medium sized structural shop or contractor specializing in steel construction. PW-280, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

Estimators

ESTIMATOR, building construction executive, twenty years' experience high class work New York City, purchasing, sub contracting, systematize construction accounting and costs. PW-255, Engineering News-Record, 10th Ave. at 36th St., New York.

Drafting and Designing

NEAT DRAFTSMAN; transitor levelman; long experience in land surveying and titles; 2 years' inspector concrete paving N. C. state highway; competent foreman, grade or paving; speak a little Spanish, 49 years old. Box 43, Jefferson, N. C.

TOPOGRAPHICAL draftsman, experienced, first class; good letterer, well versed in surveying. Available now. PW-247, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

Mechanical and Electrical

ELECTRICAL Engineer, 13 years' experience, design, construction and operation of power plants and substations both high and low voltage, field and factory testing, industrial power distribution, specifications, steam, electric and hydroelectric. Desire change in position. PW-54, Engineering News-Record, 10th Ave. at 36th St., New York.

Superintendents

ASPHALT plant superintendent, twelve years' experience; can furnish complete organization; salary $75 weekly. Available Jan. 1. PW-252, Engineering News-Record, Real Estate Trust Bldg., Philadelphia, Pa.

CONSTRUCTION superintendent, age 34, graduate civil engineer; experience docks, industrial plants, foundations, excavation operations, in charge of two million yard project, seeks permanent connections where loyalty and strict attention to business will be appreciated. PW-274, Eng. News-Record, Old Colony Bldg., Chicago, Ill.

POSITIONS WANTED

LIVE Superintendent or General Superintendent. Practical construction man. Try me on docks, power plants, drydocks, canals, other work. Fifteen years responsible charge. Would consider association with engineer. Have experience if you have money. PW-213, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

ROCK and earth excavation superintendent or walking boss wishes job on heavy excavation; prefers heavy rock work; has long experience in well drill and jackhammer work. Last heavy job 150,000 cubic yards big shot on same work nine tons seven hundred pounds; best of references. Have job now but wish to change. State salary. PW-208, Eng. News-Record, 10th Ave. at 36th St., New York.

STRUCTURAL steel fabricating shop superintendent or foreman, age 36, wishes position; competent, reliable, good organizer and producer, clean record. PW-258, Engineering News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT, broad experience all kinds heavy construction, bridges, caissons, foundations, dams, waterworks, etc.; have good following of men; salary $500; available at once. PW-264, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT construction, technical education, long experience United States and in Latin America, hydro-electric construction, factories, railways, docks and heavy machinery installations, thoroughly capable organizer from inception to completion of job, speak Spanish and Portuguese fluently, some French; location anywhere. Address: P. D. Cox, Apt. 38, 87 Hamilton Place, New York.

SUPERINTENDENT, eighteen years' experience general heavy construction, foundations, caissons, bridges, locks, dams, waterworks and power houses; have executive ability and had full charge of important contracts; available two weeks. PW-263, Eng. News-Record, 10th Ave. at 36th St., New York.

SUPERINTENDENT or general foreman, heavy industrial and public works construction. Engineer. Salary $75 week. Available immediately. PW-260, Engineering News-Record, Real Estate Trust Bldg., Phila., Pa.

SUPERINTENDENT on highway construction, familiar with all types of pavements. PW-235, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

Miscellaneous

CHIEF engineer of industrial firm is near completion of design construction and equipment program of very large manufacturing plant. He has had many years' experience on greatest undertakings of this country. Will be available in near future. PW-243, Engineering News-Record, Leader-News Bldg., Cleveland, Ohio.

CONSTRUCTION manager, M. Am. Soc. C. E., 42 years of age, solicits correspondence from those desiring a construction engineer who has had broad experience in railroad, highway, bridge and heavy foundation construction. At present employed as construction engineer in charge of $1,000,000 gravity type dam. Available Feb. 1, 1924. Minimum salary considered $7,500. Speak Spanish. PW-250, Engineering News-Record, Old Colony Bldg., Chicago, Ill.

ELECTRICAL engineer, experienced in factory maintenance and construction, desires position as electrical engineer or chief electrician. Available after Jan. 1st. PW-281, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

ENGINEER, executive, 23 years' experience in engineering work. Water systems including dams, reservoirs, filter and pumping stations. Hydraulic, ice and gas plants, municipal work; past five years assistant manager and chief engineer of a holding corporation operating the water, gas and ice plants of Omaha, Neb. Mem. Amer. Soc. of Civil Engineers and Amer. Water Works Assoc. F. P. Larmon, 4912 California St., Omaha, Neb.

ENGINEER, with private schooling and twelve years' general engineering as railroad, highway, plant and coal mining, construction, maintenance and surveys, open for engagement Jan. 1; age 32, married. PW-196, Eng. News-Record, 10th Ave. at 36th St., New York.

POSITIONS WANTED

FOREMAN, experienced, sewers, waterlines, roads, concrete, general excavation. Matthews, Room 628, 15 Park Row, New York City. Phone Barclay 8143.

GENERAL foreman or foreman for rigger, reinforced steel, structural steel, concrete, or labor gang. 25 years' experience in construction of all kinds. Available immediately. PW-271, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

GENERAL foreman, experienced heavy timber, concrete, pile driving, dock building, scow building; single; go anywhere; references. PW-270, Eng. News-Record, Real Estate Trust Bldg., Phila., Pa.

GRADUATE in marine engineering, age 24, single, desires position as a maintenance engineer ashore, home or abroad; four years' practical experience in internal combustion and steam engineering; willing worker; will accept low wage where prospects are good. PW-277, Eng. News-Record, McGraw-Hill Co., 6-8 Bouverie St., London, E. C., England.

MAN, experienced as timekeeper, time-clerk, paymaster on construction work and coal stripping, desires position. Will consider anything with prospects, and immediately available, A1 references. PW-276, Eng. News-Record, Leader-News Building, Cleveland, Ohio.

YOUNG man, six years' experience on construction work, timekeeping, payroll clerk, purchasing agent, engineering, wishes permanent position with construction company. A1 reference. Address Box 34, Hannibal, N. Y.

WORK WANTED

Designing, Detailing Checking

For structural steel and reinforced concrete. Industrial, mechanical, structural engineering. Shop drawings. Central States Engineering Company, 28 East Jackson Boulevard, Chicago, Ill.

PLANS, exhibits, maps, charts, structural details, tracing, lettering, coloring, etc. The Drafting Co., 449 West 123rd St., New York City. Morningside 0973.

SALESMEN AVAILABLE

SALESMAN, mechanical engineer, experienced, high class. SA-267, Eng. News-Record, 10th Ave. at 36th St., New York.

Additional undisplayed advertisements on page 54

Distributors Wanted

For the most economical and efficient Adjustable Shore made in America. Eight years of proven worth. New factory being built to largely increase production. Excellent territory open. Handsome profits assured. Distributors will be backed by intensive advertising campaign.

Write immediately for details.

Address,

P. O. BOX 416, TOLEDO, OHIO

FABRICATED STEEL PRODUCTS

We have just completed a large factory for the manufacture of all kinds of fabricated steel products and solicit your inquiry. We are prepared to render exceptional service on structural steel shapes and plates. Tell us what you need—we can make it. Representation desired in all territories.

The Building Products Co.

Toledo, Ohio

320

Construction Protection

The Quartermaster Auction at Boston, Jan. 17, offers Engineering Contractors a large amount of Waterproof Duck

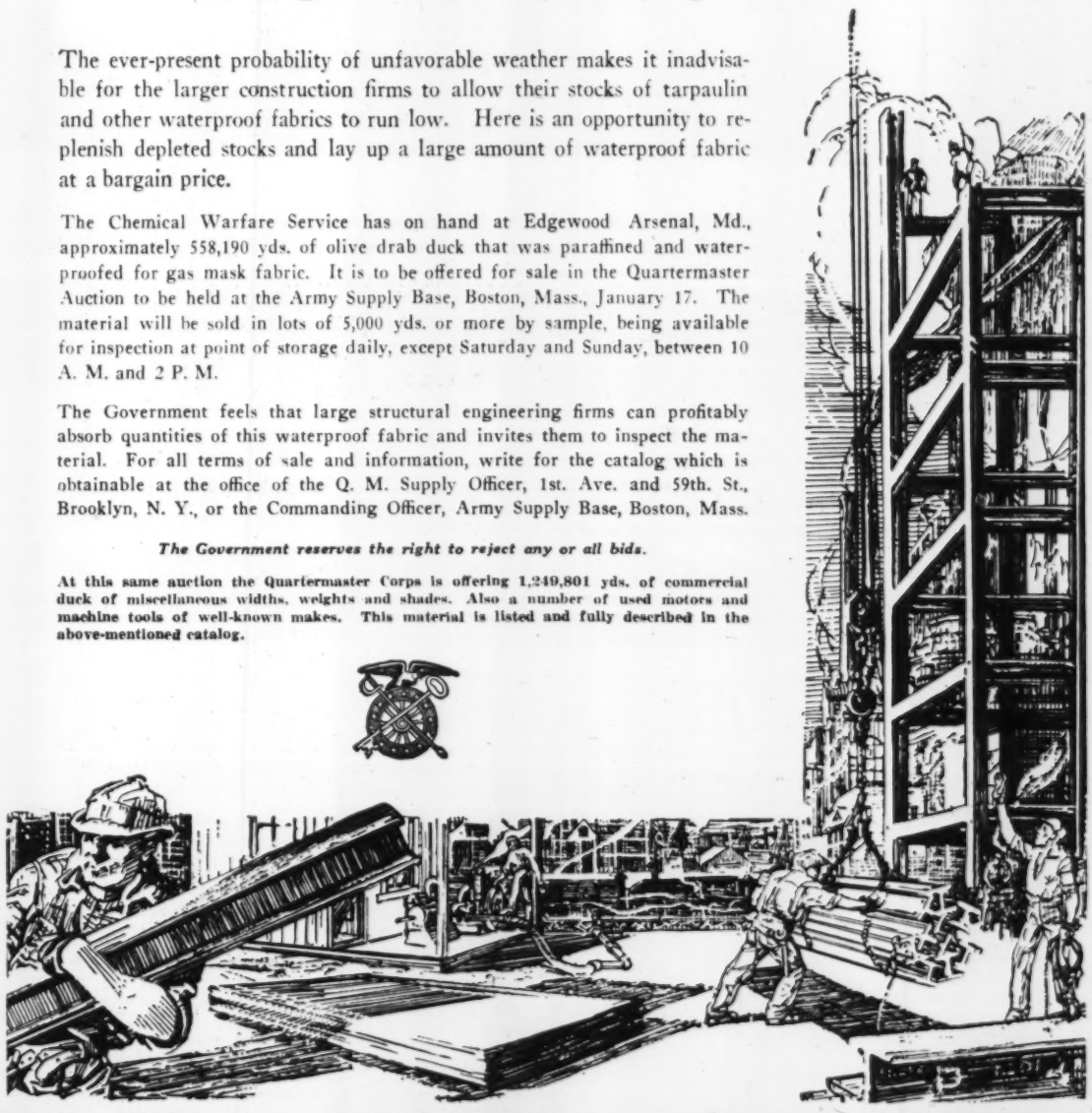
The ever-present probability of unfavorable weather makes it inadvisable for the larger construction firms to allow their stocks of tarpaulin and other waterproof fabrics to run low. Here is an opportunity to replenish depleted stocks and lay up a large amount of waterproof fabric at a bargain price.

The Chemical Warfare Service has on hand at Edgewood Arsenal, Md., approximately 558,190 yds. of olive drab duck that was paraffined and waterproofed for gas mask fabric. It is to be offered for sale in the Quartermaster Auction to be held at the Army Supply Base, Boston, Mass., January 17. The material will be sold in lots of 5,000 yds. or more by sample, being available for inspection at point of storage daily, except Saturday and Sunday, between 10 A. M. and 2 P. M.

The Government feels that large structural engineering firms can profitably absorb quantities of this waterproof fabric and invites them to inspect the material. For all terms of sale and information, write for the catalog which is obtainable at the office of the Q. M. Supply Officer, 1st. Ave. and 59th. St., Brooklyn, N. Y., or the Commanding Officer, Army Supply Base, Boston, Mass.

The Government reserves the right to reject any or all bids.

At this same auction the Quartermaster Corps is offering 1,249,801 yds. of commercial duck of miscellaneous widths, weights and shades. Also a number of used motors and machine tools of well-known makes. This material is listed and fully described in the above-mentioned catalog.



WAR DEPARTMENT

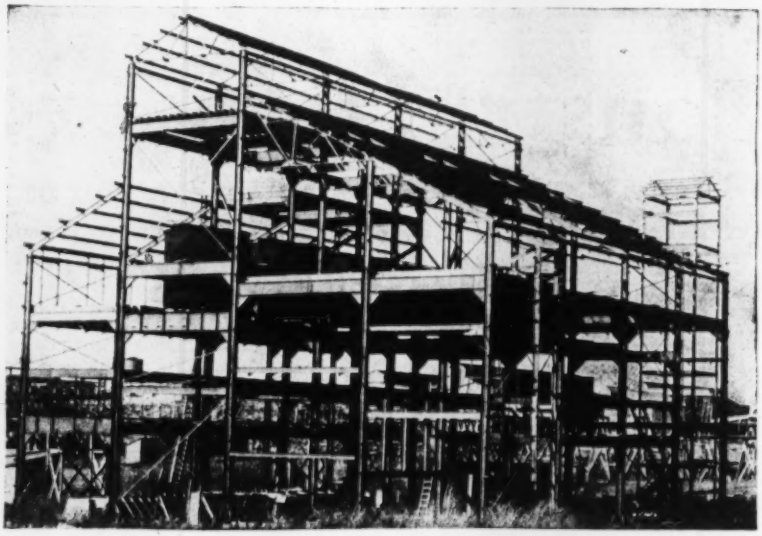
STRUCTURAL STEEL BUILDINGS

At the Old Hickory Powder Plant, Old Hickory, Tennessee

4—Structural steel buildings, 85 ft. 6 in. wide, 184 feet long, and 75 ft. 6 in. high. Covered with corrugated iron. Heavy construction, as shown by picture. Designed for heavy loading on floors.

A building identical to these was recently dismantled and shipped to Detroit, Michigan, where it will be re-erected in almost the exact form of the original. *Good proof of the sales values at Old Hickory.*

Write for further information



STRUCTURAL STEEL BUILDING

OLD HICKORY POWDER PLANT

Old Hickory, Tennessee

(Continued from Page 52)

SALESMEN AVAILABLE

MACHINERY salesman. Mechanical engineer. Experienced design, sale compressed air, electric, gasoline, oil, steam equipment for contractor, mine, power plant, shop including crushing, excavating, hoisting, pumping, etc. SA-268, Eng. News-Record, 10th Ave. at 36th St., New York.

AGENTS AND SALESMEN

Agents Wanted

for high quality steel windows and allied products. A desirable account for desirable agents. We give and expect close co-operation. Allison Steel Products Co., Chester, Pa.

TUTORING

CIVIL engineer teaches arithmetic, algebra, geometry, trigonometry, drafting, architectural, mechanical, structural, topographical surveying. Mondell, 50 E. 42nd St., New York.

EXCAVATIONS

Steam shovel work wanted on contract or rental basis. Crews furnished. No job too large or too small.

JOHN P. GILBERT
50 Church Street, New York City.

EXCAVATION

Steam Shovels for rent with crews or work taken by contract.

Dinkeys and cars or teams furnished.

H. C. AMBLER
3717 Old York Road, Philadelphia, Pa.

Notice to Manufacturers

Contractor's Equipment Company would be interested in adding one or two lines of Nationally Advertised Products. To Manufacturers requiring large distribution, we can offer excellent facilities. Branch Sales Organization and Warehouses maintained in 5 representative Cities at present time.

BO-200, Engineering News-Record
10th Ave. at 36th St., New York City

Philadelphia Salesroom

Space with Machinery Representatives for display, office and storage. Ground floor, double glass front, well lighted, excellent location for manufacturer or representative of kindred line, to open branch office.

BO-232, Engineering News-Record
Real Estate Trust Bldg., Phila., Pa.

Second-Hand Transits and Levels

Guaranteed in Good Order and Adjustment.

Write for New Bargain List

WILLIAMS, BROWN & EARLE, INC.
918 Chestnut St., Philadelphia, Pa.
Department D

FOR SALE—BOUND VOLUMES

Engineering News—57-64 inclusive.
Engineering Record—55-57 inclusive.
Engineering Record—60-64 inclusive.
Engineering Contracting—31-34 inclusive.
Transactions A.S.C.E.—67-82 inclusive.
Transactions A.S.C.E.—Index 1911.
Transactions Cornell Society of C. E.— 2 Volumes 1898-1906.

C. J. PATERSON
936 E. 67th St., Cleveland, Ohio.

NEW AND USED SURVEYING INSTRUMENTS AT FACTORY PRICES

Satisfaction guaranteed or money refunded. Write for complete list and catalogue of our high grade instruments and supplies for civil engineers, surveyors, mining, builders, contractors, etc.; 40 years' experience in repairing instruments of all makes at reasonable prices. Prompt service.

WISSLER INSTRUMENT CO.
607 N. Broadway, St. Louis, Mo.

Buff & Buff 2B **Transit**, nearly new.
8-in. **Semi Circular Vernier Protractor.**
Set **Alteneder Drawing Insts. Knife Spring Pens**, center adj. on bow insts.
Bound volumes Engineering News, 1908 to 1912.
Unbound volumes Engineering News, 1913 to 1919.

NILES POULTRY FARM
Cherry St., Hicksville, L. I.

FOR SALE

Used Transits and Levels

BUFF, 46 Dey St., New York.

USED EQUIPMENT

AND NEW, OFFERED FOR RE-SALE

Space for these advertisements is sold by the advertising inch—30 inches to a page. The price per inch is based on total space used—multiply ad space by number of insertions.

RATE PER INCH:

1 to 3 inches	$5.00 an inch
4 to 7 inches	4.80 an inch
8 to 14 inches	4.70 an inch

An inch is measured vertically on one column—three columns to a page. Any space may be used measured by the even inch in height by 1, 2, or 3 columns in width.

RATES FOR LARGER SPACES, OR SPACE ON A YEARLY BASIS, FURNISHED ON REQUEST.

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CRANE FOR RENT

20-ton **Industrial** Locomotive Crane, 50-ft. boom, double drums, A.S.M.E. boiler, 8-wheel M.C.B. Just out of shop; like new. Will rent with or without operator.

FR-201, Engineering News-Record
10th Ave. at 36th St., New York City.

FOR RENT

14-B Bucyrus Shovel

Caterpillar mounted, A-1 condition.

ARMSTRONG-TROWBRIDGE
Montgomery, N. Y.

FOR RENT

DUMP CARS

30-yd. Western all steel automatic air dump cars, latest type, new condition, standard gauge M.C.B. throughout, all safety appliances.
20 available now.

H. W. NELSON
210 South La Salle St., Chicago, Ill.

WANTED

2—10x12 or larger D.C., D.D., and **Swinger Steam Hoists** without boilers. Also
2—**Stiff Leg Steel Derricks** 40 or 50-ft. mast, 50 or 60-ft. boom and 40-ton capacity.

MALLORY MACHINERY CORPORATION
522-524 Light Street, near Lee Street,
Baltimore, Md.

FOR RENT

Engines
Boilers
Pumps
Hoisters
Air Compressors
Locomotive Cranes

Marvin Briggs, Inc.
167 Sixth St., Brooklyn, N. Y.

WANTED IMMEDIATELY

¾ or 1-yd. **Shovel**, caterpillar or traction wheels, also Crane.
20—1½-yd. **Cars**, 24-in. gauge.
1—**Hoist**, 2 drums.

Could use few other tools

W-278, Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

WANTED TO BUY

Used Coal Unloading Equipment

capable of unloading coal from boats at rate of 300 tons per hour or better. In reply give full specifications, date of manufacture, on what sort of operation engaged, and guarantee if any. Must be delivered previous to March 1, 1924. Address

W-143, Eng. News-Record
Old Colony Bldg., Chicago, Ill.

USED LUMBER

First Class Condition

80,000 ft. B.M. 12x12 in. L.L. Yellow Pine
4,000 ft. B.M. 8x12 in. L.L. Yellow Pine
30,000 ft. B.M. 10x10 in. L.L. Yellow Pine
1,800 ft. B.M. 8x10 in. L.L. Yellow Pine
5,000 ft. B.M. 8x8 in. L.L. Yellow Pine
30,000 ft. B.M. 4x10 in. L.L. Yellow Pine
4,500 ft. B.M. 4x12 in. L.L. Yellow Pine
70,000 ft. B.M. 3x10 in., 3x12 in., 2x12 in. Yellow Pine.

Average Price $50.00 per M., f.o.b. Philadelphia for immediate shipment.

Bolts—Nuts—Washers and Plates

Henry A. Hitner's Sons Company
4501 Richmond St., Philadelphia, Pa.

SWITCH ENGINE WANTED

60 to 70 Tons

Must be first class and up-to-date. Mail age, pressure, photo, full particulars and cash price.

W-233 Engineering News-Record
1570 Old Colony Bldg., Chicago, Ill.

HOISTING ENGINES

In Stock in Baltimore

DOUBLE CYLINDER 3 DRUM AND BOILER

Number
83—7½x12 Mundy.
81—8 x12 Mundy.
80—8¼x10 National.
87—9 x10 Lambert.

DOUBLE CYLINDER DOUBLE DRUM AND BOILER

10—5 x 6 Flory.
75—6 x10 Mundy.
37—6¼x 8 Flory.
13—6¼x10 Flory.
82—6¾x10 Flory.
2—7¼x10 Mundy.
45—7¼x10 National.
85—8¼x10 Lidgerwood.
84—8½x10 Lambert.
44—9 x10 Lidgerwood.
102—9 x10 Lidgerwood.

DOUBLE CYLINDER SINGLE DRUM AND BOILER

38—6¼x10 Flory.

DOUBLE CYLINDER DOUBLE DRUM SKELETON SWINGING GEAR ATTACHED

86—7 x10 Lidgerwood, place for Boiler.
72—8½x10 Lambert.
73—8½x10 Lambert, place for Boiler.
53—9½x12 Lambert.

SWINGING ENGINES

51—3 x4 Mead & Morrison.
88—4½x6 Mead & Morrison.
100—4½x6 Mead & Morrison.
90—4½x6 Mundy.
103-104-105-106—4½x6 Mundy.
107—4½x6 National.
66—5 x6 Lidgerwood.

EVERY item listed here is either new or rebuilt and will pass the most rigid inspection.

Number
67—5 x6 Lidgerwood.
68—5 x6 Lidgerwood.
77—7 x8 American.
34—15-8¼x8 Lidgerwood.

DOUBLE CYLINDER SINGLE DRUM SKELETON

7—5 x 6 Lidgerwood, Reversing.
79—5 x 7 Orr & Sembower.
8½—5 x 7 Lidgerwood.
25—5 x 8 Lidgerwood, Reversing.
35—6¼x 8 Glover.
28—6½x10 Con. Plant.
29—6½x10 Con. Plant.
26—7 x10 Hunt.
22—8 x10 Hunt, Reversing.
40—8¼x10 Lidgerwood, 4 Winch Heads, Reversing.
24—8½x10 Lidgerwood Reversing.
112—2-8½x10 Orr & Sembower, Reversing.
113—7-8½x10 Orr & Sembower, Reversing.
61—5-8½x10 Mead & Morrison, Reversing.
23—9 x10 Roberts.
52—12x12 Lambert, Reversing.
27—7 H.P. Dake.

DOUBLE CYLINDER DOUBLE DRUM SKELETON

Number
11—5 x 8 Lidgerwood.
43—6¼x 8 Lidgerwood.
42—6¼x10 Crook.
41—6½x10 Lambert, place for Boiler.
32—6½x10 American.
20—6½x12 Mundy.
15—6½x12 Mundy.
39—2-7 x 8 American, Reversing.
19—7 x10 Lidgerwood.
21—7 x10 Lambert, place for Boiler.
36—7 x10 Flory, place for Boiler.
93—7 x10 Lidgerwood.
94—7 x10 Lambert.
95—7 x10 Lambert.
96—7 x10 Pittsburgh.
101—7 x10 Flory.
7 x10 Marine.
7½x10 Mundy.
46—8 x10 National, place for Boiler.
78—8 x10 Marine Iron Works.
111—2-8¼x10 Mead & Morrison Reversing.
76—8¼x10 American.
97—8¼x10 Flory, place for Boiler.
108—2-9 x10 Lidgerwood.
99—10x12 Mead & Morrison.
14—20 H.P. Dake.

DOUBLE CYLINDER 3 DRUM SKELETON SWINGING GEAR ATTACHED

89—7x10 Lidgerwood.

DOUBLE CYLINDER 3 DRUM SKELETON

63—7 x10 American, place for Boiler.
64—7 x10 American, place for Boiler.
74—7 x10 Flory.
58—8¼x10 Flory.
98—8¼x10 Lidgerwood.
70—9 x10 Mead & Morrison.

Sharp and Conway Sts. **LOUIS A. TARR, Inc.** Baltimore, Md.

FOR SALE

INSLEY STEEL TOWER

1—240-ft. Insley Extra Heavy Steel Tower, together with all necessary auxiliary equipment.

Complete Stone Crushing Plant

1—24x36-in. Traylor Type "A" Blake Jaw Crusher, manganese steel, fitted complete.
1—Allis-Chalmers, Gates Gyratory Crusher, size 6, Style "D."
1—Allis-Chalmers, Gates Gyratory Crusher, size 3, Style "D."
1—48-in.x12-ft. 0-in. Traylor Trunnion Type Revolving Scalping Screen.
Complete set of sizing screens.
1—100-hp. Northwestern Motor.
1— 75-hp. General Electric Motor.
1— 25-hp. General Electric Motor.
All motors slip ring type, operated on 3 ph., 60 cy., current.
1—Robins Conveyor.
1—Bucket Elevator.
10—66 cu. ft. capacity Mine Cars, end dump.
6¼ tons 25-lb. rail in mill lengths.

Rodgers & Hagerty, Inc.
409 Main Street, Bethlehem, Pa.

TARPAULINS
AND
Waterproof Canvas Covers

All Sizes—All Weights at Hand
DASH MFG. CO., INC.
56 Suffolk St., New York City.

DEPENDABLE USED EQUIPMENT
READY TO DO YOUR JOB

Our equipment is maintained, inspected and overhauled at our own shops, by men familiar with every piece, which assures you equipment that is dependable and superior to just ordinary used machines.

DRAGLINE EXCAVATORS

1—"Lidgerwood" Class "B" Steam Dragline Excavator, truck mounted, 60-ft. or 75-ft. boom, 2-yd. or 1½-yd. bucket.
1—"Lidgerwood" Class "B" Dragline Excavator, truck mounted, 60-ft., or 75-ft. boom, 2-yd. or 1½-yd. bucket.
1—"Lidgerwood" Class "B" Steam Dragline Excavator, mounted on four double flanged wheels. Boom is 60 ft. with 15-ft. extension and handles 1½-yd. or 2-yd. bucket.

1—"Bucyrus" Class 14 Steam Dragline Excavator, mounted on caterpillars, with 60-ft. boom and 2-yd. bucket.
2—"Bucyrus" Class 24 Electric Dragline Excavators, skid mounted, with 85-, 100-, or 115-ft. boom, and 4½-, 3½-, or 2½-yd. bucket.
1—"Marion" Model 21 Dragline Excavator and Crane, mounted on caterpillars; 32-ft. boom, ¾-yd. bucket, either drag or clam shell.

DERRICKS AND HOISTS

Steel guy derricks, 70-ft. boom, 82-ft. mast. Wood guy and stiff-leg, 45-ft. boom, 50-ft. mast. Lidgerwood and Thomas Hoists.

PUMPS

Centrifugal pumps up to 14 in. with or without motors.

SUB-STATION TOWERS

high voltage, with lightning arresters.

6 CONCRETE BUCKETS

1½-yd. capacity.

SMITH CONCRETE MIXERS

½-yd. steam—¼-yd., gasoline.

25—ELECTRIC MOTORS—25

7½ to 500 hp.—220-440-2200—A.C.

1—10-TON HUBER STEAM TRACTOR

LOCOMOTIVES

1—35-ton Baldwin, std. gauge.

LOCOMOTIVE CRANES

Orten & Steinbrenner, 20 ton.

50—TRANSFORMERS—50

6/10 kva. to 500 kva.

TRANSMISSION AND HIGH TENSION LINE MATERIAL

STEAM PILE HAMMER

1—Ingersoll-Rand, 3 in.

GATE VALVES

10-12-15-in. Iron Body Bronze Mounted.

SPUD EQUIPMENT

Speed Hoists for use on dredge or scow.

NEW REPAIR PARTS at half price for above equipment, also for Bucyrus Dragline Excavators, Class 9½ and 175, Marion Models 21 and 36, Smith one-yard Concrete Mixers, Western 4- and 12-yd. Dump Cars, Cyclone Class "B" Non-traction Well Drills, Ingersoll-Rand E-44 Tripod and 100 B.C.R. Jackhamer Drills, Sullivan F. L. 3 Tripod and D.P. 33 Jackhamer Drills, American Railroad Ditcher, Dull Link Gravel Washers, American 40 and 50-ton Locomotives, Allis-Chamers, General Electric and Westinghouse Motors.

MIAMI CONSERVANCY DIST. SALES DIVISION, DAYTON, OHIO

"WE BUY, REBUILD, SELL or RENT"

ANNOUNCEMENT!

In addition to our large stock of equipment listed on the lower part of this page, we have purchased the following equipment which was just released from a large sewer job being completed in Detroit. This equipment will not be loaded out to our Plants for several weeks, and we are now offering same for sale f.o.b. Detroit. Description as listed below:

BOILER

1—Ames Locomotive type, 100 hp., Butt strapped, complete with stack. Also several small vertical boilers.

DUMP CARS

64—Western, 4-yd., 36-in. gauge.
27—K. & J., 4-yd., 36-in. gauge.
4—Drop bottom Concrete Cars, 36-in. ga.
12—Koppel 1½-yd., "V" shaped, cradle dump cars, 36-in. ga. All steel, spring draw bars and axles.

CRANE

1—15-ton Brown Hoist Locomotive Crane, 8-wheel MCB, standard 48-ft. boom, also 1—65-ft. goose neck boom.

DREDGE

1—Hydraulic Dredge, Hull 32x8x110-ft., equipped with 12-in. Erie Pump, 250 hp. Ball Engine, tandem compound, and 300 hp. Scotch Marine Boiler, 3 Morrison Furnaces. This Dredge is complete with all miscellaneous equipment and is now located at Erie, Pennsylvania.

LOCOMOTIVES

1—Brooks, 16x24, standard gauge, 6-wheel switcher with tender. Weight on drives 45 tons.
2—Porters, 18-ton, 36-in. gauge, cyl. 10x16. Shop No. 5238 and No. 4612.
3—Vulcan, 18-ton, 36-in. gauge, cyl. 10x16, Shop No. 1612, No. 1577, No. 1575.
2—Porter, 14-ton, 36-in. gauge, cyl. 9x14, Shop Nos. 2873 and 3469.
2—Burton 3½-ton, 36-in. gauge, purchased new in 1921.

DRAGLINE

1—Class No. 20 Bucyrus Dragline Excavator, 2½-yd. Page Bucket, Steam, Shop No. 856, on skids and rollers. 85-ft. boom.

PUMPS

Miscellaneous lot of piston pumps, consisting of Cameron & Prescott & Blake.
1—Pulsometer No. 3.
1—Pulsometer No. 7, 4-in. suction and 4-in. discharge.
1—Centrifugal, 8-in., direct connected to Westinghouse 9x8 engine.

STEAM SHOVEL AND CRANE

1—Erie type "B", traction wheels, high lift, ¾-yd., also has ½-yd. sewer bucket and stick, also 36-ft. crane boom.
1—Bucyrus 70-C, Shop No. 1266, equipped with 2½-yd. dipper, new boiler.

All equipment listed below is in stock and may be inspected at one of our four Rebuilding Plants

CLAMSHELL BUCKETS

3—2-yd., 2 Owens, 1 O&S.
2—1½-yd. Williams, heavy duty.
23—1-yd., Blaw Knox, Standard, Lakewood, Owens.
34—¾-yd., Standard, Keisler, Hayward, Owens and Blaw Knox.
14—½-yd. All makes.

CONCRETE MIXERS

2—Ransome, No. 56-S, cap. 2-yd., on skids, without power.
60—Concrete Mixers, sizes 28S, cap. 1-yd., 21S, cap. ¾-yd.; 14S, cap. ½-yd. and 10S, cap. 1¾-yd. With steam or electric power with side loaders or batch hoppers. Following makes: Marsh-Capron, Koehring, Milwaukee, Ransome, Smith, Smith-Chicago, Rex, Lakewood, Foote, Cube, or Oshkosh.
42—7S, cap. 1 bag, with low charging platforms, with gasoline engines.

CARS

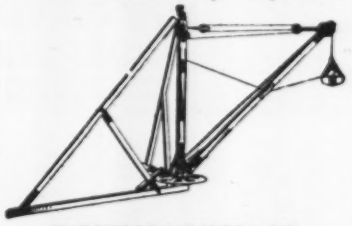
52—Koppel Flat Cars, 24-in. gauge, Spring Journal and draw bars. Frame 35x84x6-in. channels.
15—Lakewood Flat Cars, spring journals and spring draw bars, ball bearing.

CATERPILLAR CRANE

1—Northwest Combination Crane and Dragline, caterpillar, 40-ft. boom, 70-hp. Gasoline Engine, ¾-yd. Page Bucket.
1—Brownhoist, combination Crane & Dragline, 40-ft. boom, ¾-yd. clam shell bucket, has ⅝-yd. skimmer scoop attachment also equipped to handle 1-yd. Dragline bucket.

COMPRESSORS

1—Ingersoll-Rand, Steam, cap. 960 cu. ft. per minute, 100 lb. pressure.
1—Sullivan, Class W.G.3, belt driven, cyl. 10x12.
1—Westinghouse, size 11x11x12, on skids.
1—Westinghouse, size 8x8x9, on skids.



ELECTRIC HOISTS AND DERRICKS FROM HOG ISLAND

Specifications of Electric Hoists

35—American late model hoists. These hoists have 2 drums with attached swinging gear, with 37-hp. Otis A.C., 440-v., 60-cy., 3-ph. electric motor—complete with controllers and resistance grids—can be changed to suit customer's current requirements if desired.

Can furnish counterwighted holding drums with these hoists when used for operating bucket.
Also several 55 and 75-hp., single, and double drum hoists with A.C. motors.

Specifications of Derricks

Large number of practically new American stiff-leg derricks.
Boom, 14x14x80-ft., trussed.
Mast, 16x16x40-ft.
Legs, 14x14x62-ft.
Bull wheel, 16-ft.
For Single Line Work or Arranged for Bucket Operation.
Will sell fittings only if desired.
Also have large stock of lighter stiff-leg derricks, several steel stiff-legs, 20, 30 and 50 ton.

GUY DERRICKS

9—Wood Guy Derricks; bucket operating or hook line, masts 60 to 90 ft., booms 50 to 80-ft., with "American" fittings.

STEAM HOISTS

10—Three-Drum Hoists, with or without boilers. Sizes, 9x12, 9x10, 8¼x10, and 7x10, with separate swingers for derrick work. All makes.
26—Two-Drum Hoists, with or without boilers. Sizes, 10x12, 9x10, 8¼x10, 7x10, 6¼x10, 6x8, and 5x8. Can be equipped with holding drum for bucket work. Several special Cableway Excavator or Drag Scraper Hoists. All makes.
2—8¼x10 American, D.C., D.D., with swingers.
1—7x10 National Single drum with boiler.

LOCOMOTIVES

2—3-ton Plymouth, 24-in. gauge gasoline.
1—7-ton Davenport, 24-in. gauge, steam.
1—6-ton Whitcomb, 24-in. gauge, gasoline.
1—6-ton Plymouth, 24-in. gauge, gasoline.

ROAD ROLLERS

1—10-ton Austin, 3-wheel, gasoline, single cylinder.
5—10-ton, 3-wheel, steam—2 Buffalo-Pitts, 1 Kelly-Springfield, 1 Peerless, 1 Monarch.
1—5-ton Iroquois Tanden, steam.
1—3-ton Erie Tandem, steam, new.

STEAM SHOVELS

4—Keystone Excavators. 3—No. 3. 1—No. 4
2—Type O Thew on traction wheels with ⅝-yd. dipper.
1—Type A-1 Thew, traction wheels, ⅞-yd. dipper.

CRANES

2—Byers Auto Cranes, on traction wheels, with 30-ft. boom, with ½ or ¾-yd. clam shell bucket, 1 steam, 1 gasoline.
1—15-ton, 8-wheel, O.&S., 40-ft. boom.

The above is only a partial list of our equipment. Write for latest stock list

Equipment Corporation of America

Manufacturers and Rebuilders of Contractors' Equipment

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Phone, Spruce 5498

CHICAGO, ILL.
1455 Lumber Exchange Bldg.
Phone, Randolph 6586

PITTSBURGH, PA.
655 Empire Bldg.
Phone, Smithfield 1502

FOR SALE OR RENT

STEAM SHOVELS

1—Type B Erie Traction. Shop No. 321, ¾-yd. dipper.
7—70C Bucyrus, Shop Nos. 1277, 1445, 1482, 1499, 1582, 1608 and 1998; 2½-yd. dippers.
3—70-ton Bucyrus, Shop Nos. 920, 977, and 1233, 2½-yd. dippers.
1—Model 60 Marion, Shop No. 2367, 2½-yd. dipper.
1—Model 80 Marion, Shop No. 876, 4-yd. dipper.

STEAM SHOVEL PARTS

1—1½-yd. Coal Loading Dipper for Marion 36 Steam Shovel.
2—Booms for 70-ton Bucyrus, length 29 ft.
1—Boom for 70C Bucyrus shovel, composite, length 40 ft.
1—Marion Dipper, 2½ cu. yd. capacity.
1—Bucyrus Dipper, 3 cu. yd. capacity.
Jack Arms and Boom Engines for 70-ton Bucyrus Shovels.

DRAGLINE EXCAVATORS

1—Class 7 Bucyrus. Shop No. 798, mounted on skids and rollers, 42-ft. boom, 1-yd. bucket.
1—Class 14 Bucyrus. Shop No. 745, mounted on skids and rollers or tandem wheels, 60-ft. boom, 2-yd. Page bucket.
1—Class 14 Bucyrus. Shop No. 2140, mounted on caterpillars, 60-ft. boom, 2-yd. Page bucket.

LOCOMOTIVES

1—18 x 24 American, 6-wheeled switcher, Brooks No. 2318. Wt. 55 tons on drivers.
1—18x24 American 6-wheeled Switcher, Brooks No. 1778. Wt. 50 tons on drivers.
1—16x24 Baldwin 6-wheeled Switcher, with tender. Shop No. 44887. New in 1917. Wt. 43 tons on drivers. 180 lbs. pressure.
1—16x24 Vulcan 4-wheeled Switcher with tender. Shop No. 1764. Wt. 40 tons. 180 lbs. steam pressure.

LOCOMOTIVES (Continued)

1—16x24 Baldwin 4-wheeled Switcher with tender. Shop No. 37643. Wt. 39 tons. 180 lbs. steam pressure.
1—16x24 Davenport 4-wheeled Switcher, with tender. Shop No. 900. Wt. 38 tons. 170 lbs. steam pressure.
1—17x24 Baldwin 4-wheeled Saddle Tank Locomotive. No. 15683. Wt. 47 tons.
1—16 x 22 C. M. & St. P. Ry., Class J-2, 4-wheeled switcher. Weight 32 tons.
1—Std. gauge 11x16 Davenport Dinkey. Shop No. 1163, new in 1912. Air brakes, automatic couplers. Wt. 20 tons
2—Std. gauge 11x16 American 4-wheeled Saddle Tank Locomotives. Shop Nos. 46519 and 47421, built 1912. Wt. 21 tons. Steam brakes, automatic couplers.
1—Std. gauge, 11x16 Davenport Dinkey. Shop No. 1027, new in 1910. Steam brakes. Wt. 20 tons.
1—36-in. gauge, 10x16 Vulcan Dinkey; Shop No. 868. Wt. 18 tons.
2—24-in. gauge, 7x12 Davenport Dinkies. Shop Nos. 1411 and 1524. Wt. 9 tons.
1—24-in. gauge, 7x12 Vulcan dinkey, Shop No. 2345. Wt. 9 tons.
1—24-in. gauge 6x10 Davenport side tank Dinkey. Shop No. 1307. Wt. 7 tons.
1—24-in. gauge 5x10 Shay geared, Lima, No. 2678. Wt. 12 tons.
1—24-in. gauge, 6-ton Plymouth. Type 2, No. 1077.

CRANES

1—30-ton Ohio Locomotive Crane. No. 3416, new in 1919. 55-ft. boom, 20-ft. extension, 1½-yd. clam shell bucket.
1—Pintle Type Crane, built by Variety Iron & Steel Works. New in 1919; 48-ft. boom, 15-ton cap. at 18-ft. radius; 7-ft. 10½-in. gauge, 12-ft. wheelbase, self-propelling. Base of boom 17 ft. above track. Bucket-operating drums. Wt. 50 tons. Price, 25% of new.
1—10-ton Industrial Crane (Shop No. 1989), 4 wheeled, 40 ft. boom.
1—Crane Boom, 33 ft. long, drum and necessary equipment for converting type B Erie shovel into crane.

DUMP CARS

38—20-yd. Western, all steel Air Dump Cars, 80,000 lb. capacity.
20—12-yd. Western Air Dump Cars, 19-ft. beds, steel sills, box girder doors.
4—16-yd. Western Air Dump Cars, steel sills, box girder doors.
8—12-yd. Western Hand Dump Cars, 19-ft. beds, steel sills, box girder doors, full M.C.B.
15—8-yd. Western, 36-in. gauge, double truck side Dump Cars; steel draw sills, wood beds.
4—4-yd. Continental, 36-in. Gauge Side Dump Cars, wood beds, steel draw sills.
9—12-yd. Western Air Dump Cars, 26-ft. beds.
4—4-yd. Western, 36-in. gauge, Wood Sill Dump Cars, truss rod doors.
24—4-yd. Continental, 36-in. gauge, wood draw sills, 4 pedestals, truss rod doors.
8—3½-yd. Peteler 36-in. gauge side dump cars, wood sills and wood beds.

SPREADER CARS

1—Std. gauge Jordan All Steel Spreader Car, 100,000 lb. capacity. Shop No. 317.
1—Std. gauge Western Spreader Car.
1—36-in. gauge Western Spreader Car.
1—36-in. gauge Oliver Spreader Car.

MISCELLANEOUS

1—7x10 D.C., D.D. Lidgerwood Hoist No. 25967. No boiler.
1—7x10 D.C., D.D. Lambert Hoist, with or without boiler.
3—1½-yd. Western Bottom Dump Wagons.
3—Locomotive Air Pumps, 9½-in. and 11-in. simple, 8½-in. and 9½-in. cross compound.
2—80-hp. horiz. Boilers, with fittings.
1—1½-yd. Page Dragline Bucket.
6—Mead-Morrison 1½-yd. Clam Shell Buckets.
3—1¼-yd. O. & S. coal loading clam shell buckets.

CLAPP, RILEY & HALL EQUIPMENT CO., 14 So. Canal St., Chicago
(Successors to Clapp, Norstrom & Riley Equipment Co.)

FOR SALE

R. R. Pin Connected Through Truss Span

228 ft. 0 in. C. to C. of end pins

E 40 213 tons

Forty Other Bridges

J. NORMAN JENSEN, C. E.
343 S. Dearborn St., Chicago, Ill.

Come to the Factory for Your

PULSOMETER STEAM PUMP

THAT'S the surest way to satisfaction. New Pulsometers for rent or lease. Reconditioned Pulsometers for sale at *real* bargain prices. Sizes, 2½, 3½, 4, 5, 6, 8 inches in stock now. 'Nuff said.

See our large advertisements in the display advertising section.

Pulsometer Steam Pump Company, 221 West 41st Street, New York City

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GASOLINE ENGINES

Four cylinder 7½x10 Valve-in-head Enterprise gasoline engines, very rugged design with two extra heavy flywheels, designed for duty on excavating machinery. Will develop 55 hp. at 400 r.p.m. All working parts enclosed. Fan and other auxiliaries direct driven. These engines are all new, have never been used. Are surplus stock, account change in design of our machines. Will sacrifice. Complete description on request.

BUCYRUS COMPANY
Specialty Dept.
South Milwaukee, Wis.

FOR SALE

Pawling & Harnischfeger full **Caterpillar Crane,** Model 206, new 1923, equipped with 40-ft. boom, 50-hp. gas engine, ¾-yd. clam shell bucket, used 60 days.
Northwest **Crane,** with 40-ft. boom, 1-yd. clam shell bucket, also equipped with ¾-yd. shovel dipper. Machine new this spring.
Brown **Hoist Locomotive Crane,** 8 wheel, 50-ft. boom, 1½-yd. clam shell bucket.
Marion Model 28 **Steam Shovel,** traction wheels, ¾-yd. dipper, also equipped with 33-ft. crane boom, and ¾-yd. clam shell bucket.
American **Switcher Locomotive,** type 0-6-0, 18x24-in. cylinders, 160 lb. boiler pressure, first class working condition.

Dolan-Tucker-Smith Equipment & Supply Co.
53 W. Jackson Blvd., Chicago, Ill.

FOR SALE

STEAM SHOVEL

1—Keystone, equipped with both skimmer and ditcher scoops. Machine just coming out of shop, and will guarantee condition. Price with terms.

LEONARD F. SMITH, LaPorte, Ind.

FOR SALE

Carnegie Steel Piling

188 pieces 17 ft. long.
4 corner pieces 17 ft. long.

Immediate Delivery

ELLIOTT & HARMAN ENGINEERING CO.
Peoria, Ill.

FOR SALE

PARSONS' TRENCHING MACHINE

For Immediate Delivery

JOHN B. McLANE & COMPANY
Newport, Kentucky

1—0-42 Austin, steam driven, digs 18 ft. deep, up to 42 inches wide.
1—00-42 Austin, steam driven, digs 12 ft. deep, up to 42 inches wide.
1—00-42 Austin, gasoline driven, digs 12 ft. deep, up to 42 inches wide.
1—Austin Backfiller, all caterpillar traction.
3—Parsons Backfiller, caterpillar traction.

JAMES McELROY
11 So. La Salle St., Chicago, Ill.

TRENCH MACHINES

Parsons 48, Steam, cuts to 48 in. wide x 78 ft. deep. Location New York City. Bargain.
Austin Backfiller Caterpillar, 30-ft. boom. Cheap.
Buckeye No. 4, Gasoline. Good shape.
2—Austins 00-42, Gasoline. Almost junk prices.

C. C. SIXBEY
149 Centre St., New York

Locomotive Cranes

STANDARD GAUGE

1—20-ton Browning, 8-wheel, standard gauge, double drum, 50-ft. boom, Shop No. 1149, Mass. Standard boiler, rebuilt and in fine condition.

1—25-ton Browning, 8-wheel, standard gauge, double drum, 52-ft. boom, Shop No. 1221, Mass. Standard boiler, with outriggers.

1—25-ton Browning, 8-wheel, standard gauge, double drum, 50-ft. boom, Shop No. 1265, equipped with outriggers, excellent condition.

1—25/30-ton Browning, 8-wheel, standard gauge, double drum, 50-ft. boom, A.S.M.E. boiler, new 1922. Crane like NEW.

BROAD GAUGE

2—20-ton Brownhoist, mounted on 10-ft., 3-in. gauge, 4-wheel trucks, 75-ft. booms, Mass. Standard boilers, perfect condition.

1—20-ton Brownhoist, mounted on 15-ft., 3-in. gauge, 4-wheel trucks, 75-ft. boom, electrically-operated, 3 ph., 60 cy., 440 v.

1—25-ton mounted on 7-ft. 6-in. gauge, 50-ft. boom, double drum, bucket handling, A.S.M.E. boiler, new 1918. Perfect condition.

Railroad Equipment

10—90-ton 2-8-0 Consolidation Type Standard Gauge Road Locomotives, 180 lb. steam pressure.

100—Standard Gauge Provision Cars. Can also be used as Box Cars if desired. 40-ton bodies mounted on 30-ton all steel trucks.

100—Standard Gauge Provision Cars. Can also be used as Box Cars if desired. 40-ton bodies mounted on 30-ton trucks. Cars have steel center-sills.

50—50-ton All Steel Hopper Bottom Coal Cars. Very excellent condition.

50—50-ton All Steel Hopper Bottom Coal Cars. Good condition.

CATERPILLAR CRANE

1—No. 5 Austin Caterpillar Mounted Gasoline Operated Full Revolving Crane. Will equip with 30-ft. or 40-ft. boom, as desired. Overhauled and in perfect condition. Prompt delivery.

STEAM SHOVELS

1—Marion 61 Railroad Type Shovel, 2½-yd. dipper. Exceptionally fine condition.

1—Marion 21, Caterpillar Mounted, ¾-yd. dipper. New 1920.

PNEUMATIC TOOLS

We have just purchased an enormous quantity of air tools and have available from our Philadelphia shops anything to meet your requirements. Hammers, Drills, New Spare Parts, Rivet Sets, Chisels, etc. Advise us as to your requirements.

1324 Widener Bldg.
PHILADELPHIA, PA.

B. M. WEISS

We Own and Offer

Gantry Cranes

LINK BELT GANTRY CRANES

New 1918. Full revolving, 90-ft. booms, 20-ft. gauge, 22-ft. wheel base. Will permit standard gauge railroad car to pass directly under them. Machines like new. Ideal for docks, scrap yard, lumber yard, steel mill, etc., for unloading, handling and storing.

We also offer: Dredges, Shovels, Cars, Locomotives, Draglines, Road Equipment, Hoisting Engines, Etc. What are your requirements?

FOR SALE

STEEL PILING

136 pieces 50-ft. lengths.
97 pieces 55-ft. lengths. 12 corner pieces.
Can easily cut carload or more, into 15, 20, 25, 30 or 35-ft. lengths.

Load Immediately

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Rails, Cars, Locomotives, Pipe

Steel Sheet Piling

Lackawanna and United States in various lengths for immediate shipment.

BROWN & SITES CO.

Main Office:
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FOR SALE

1—Marion ⅝-yd. **Steam Shovel, $1500.**
1—No. 3 Keystone **Grader** with Skimmer and Ditching Scoop, **$2000.**
1—Smith ½-yd. Tilting **Mixer** on wheels with power Loader and Discharge, **$1200.**
1—10-ton **Steam Roller, $700.**
1—Gasoline Diaphragm **Pump** on Wheels (new), **$200.**
1—Schramm Gasoline **Compressor No. 4, $600.**
1—Steel "A" Frame, **Traveller** with 55-ft. Boom, 3 Drum Engine and Boiler, Dake Swinger and ⅜-yd. Owen Bucket, **$4000.**
2000 feet of **Steel Road Form** for 6 or 7 inch road at 30c. per foot.

All of this equipment is in Philadelphia

C. J. DONNELLY
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STEEL SHEET PILING

U. S. Steel Corp. type.

245 pcs. 12½ inches by 40 ft., new;
56 pcs. 12½ inches by 20 to 35 ft., new;
90 pcs. 9 inches by 20 ft., 90% new.

WESTERN STATES GAS & ELECTRIC CO.
Placerville, California.

STEEL PILING

Lackawanna, United States, and Corrugated

WEMLINGER
Singer Bldg., New York.

FOR SALE

Used Equipment in good condition, as follows:

SHOVELS

2—Thew Shovels. 1—Erie Shovel.

MIXERS

2—1-yd. Koehring Heavy Duty Mixers, one new and one used.

INDUSTRIAL TRACK

2—Miles 24-in. gauge.

LOCOMOTIVES

10—3-ton, 24-in. gauge Plymouth Gasoline Locomotives.
2—36-in. gauge Locomotives, one Porter and one Vulcan.

INSLEY STEEL TOWER

1—120-ft., outfit complete.

The A. S. Hecker Company
8701 Union Ave., Cleveland, Ohio.

CLAM SHELL BUCKETS

½ and ¾ cu. yd. [illegible] per cal. week
1 and 1¼ cu. yd. [illegible] per cal. week

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For All Purposes

Digging and Rehandling

STEAM SHOVELS

Erie B Caterpillar; also Traction. Osgood, Bucyrus and Marion Revolving Shovels, ¾, 1 and 1½-yd. Railroad Shovels, all sizes and makes.

Cars—Locomotives—Cranes

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FOR SALE

MARION SHOVEL

No. 40. Perfect condition. Bargain if sold immediately. Convenient payments arranged. Inquire,

COLONIAL SAND & STONE CO., INC.
643 West 50th St., New York City, N. Y.

FOR SALE OR RENT

ROAD ROLLER

1—Kelly-Springfield 10-ton Road Roller, with Steam Scarifier attached. New 1922, and used very little. Above equipment is located in central Pennsylvania

J. L. WARD
11100 Wade Park Ave., Cleveland, Ohio

Complete Power Plant

Purchased from U. S. Navy, Boston

NEW 25-TON BALDWIN 4 WHEEL, STANDARD GAUGE, GASOLINE LOCOMOTIVE

Heating Plant

4—72-in.x19-ft., 6-in. Dillon, 125 lb., Mass. Std. HRT Boilers, with breeching, piping, all regular fittings, feed water pumps and Cochrane Feed Water Heater.
Also centrifugal pumps, tanks and piping to complete the circulating system in connection with the hot water heating, serving 60,000 sq. ft. radiation.
1—High pressure and low pressure U-type Pittsburgh Company heating coils.

Power Equipment

2—1730-cu. ft. OCE Chicago, dir. conn. electric compressors, 3 ph., 60 cy., 2200-550-440-220 v.
3—4800-cu. ft., 110-lb. brass tube Air Aftercoolers.
1— 400-gal. Yeomans Sewerage Duplex Ejector Pump, 40-ft. head, 3-60-550 v.
2— 350-gal. Morris Centrifugal Pumps, 50-ft. head, D.C. to 3-60-550 v. motors.
1— 350-gal. DeLaval Centrifugal Pump, 90-ft. head, D.C. to 3-60-550 v. motor.
1—1800-gal. DeLaval Centrifugal Pump, 75-ft. head, D.C. to 3-60-550 v. motor.
1—1800-gal. DeLaval Cent. Pump, 75-ft. head, D.C. to DeLaval Turbine.

PIPING—Considerable quantity of iron and brass piping, including about 150 various types and sizes of valves, also pipe covering.
1—750-kw., Syn. G. E. Converter, 240-120-v. Panels, Transformers 3-60-13,800 or 6900 v.
1—500-kw., Syn. G. E. Converter, 240-120-v. Panels, Transformers 3-60-13,800 or 6900 v.
1—250-kw., 125-v. Delhi Generator, D.C. to Kerr Turbine.
6—333-kva., Pittsburgh single phase, 60 cy., Transformers, primary 13,200 v., secondary 2300 v.
3—200-kva., Packard, single phase, 60 cy., Transformers, primary 13,200 v., secondary 575 v.
15—Panels, switchboard equipment, all purposes.

PLANT OPERATED TWO YEARS, ALL EQUIPMENT INSTALLED IN DUPLICATE.

I SPECIALIZE IN COMPRESSORS

2588-ft. OC-3 Ingersoll, compound steam, 2 stage.
2570-ft. Laidlaw Feather Valve, compound steam, duplex air, 60 lb.
3—1955-ft. XPV-3 Ingersoll, compound steam, 2 stage.
1592-ft. X-1 Ingersoll, duplex steam, duplex air, 55 lb.
NEW 1500-ft. WC Sullivan Tandem, compound steam, 2 stage.
1190-888-ft. X-3 Ingersoll, compound steam, 2 stage.
528-ft. FR-1 Ingersoll, simple steam, single stage.
1—446-ft. X-3 Ingersoll compound steam, 2 stage.
396-ft. WB-2 Sullivan, simple steam, 2 stage.
AIR RECEIVERS, 30 in.x6 ft., Mass. Std., 36 in.x8 ft. and 42 in.x7 ft.
No. 5 Leyner Drill Sharpener.

1000 ft. and 2000-ft. Cableways.
5011-3800-2033 ft. PRE-2 Ingersoll Electric 3-60-2200 v.
2—3460-ft. O-CTDE Chicago Electric 3-60-2200 v.
2678-ft. PRE-2 Ingersoll Electric 3-60-550 v.
2240-1730-ft. OCE Chicago Electric 3-60-2200 v.
1190-ft. XB-2 Ingersoll, 2-stage belt.
810-ft. OCB Chicago, 2-stage belt.
1—688-ft. ER-1 Ingersoll, single stage belt, 40 lbs.
1—599-446-ft. XB-2 Ingersoll, 2-stage belt.
478-ft. WJ-3 Sullivan Angle, 2-stage belt.

BOILERS—GENERATORS—LOCOMOTIVE CRANES—LOCOMOTIVES, ETC.

10 High St.—*A. Lee Ellis*—Boston, Mass.

"The Buyer Must Be Satisfied—Always"

Boilers

2—200-hp. Penn Scotch Marine Dry Back self-contained. 150 lb. steam.
1—100, also 150-hp. Fire Box type, 100 lb.
2—40-hp. Loco. Fire Box type, 100 lb.

Crushers

9x15 Western Jaw Crusher, portable.
No. 4 Gates Gyratory, Manganese fitted.
No. 6 Austin RH, also Straight Drive.

Gasoline Locomotives

3-ton, 24-in. ga. Plymouth.
3-ton, 30-in. ga. Plymouth, nearly new.
5, also 7-ton, 36-in. ga. Whitcomb.

Mid-Continent Equipment & Machinery Co.
319 North 4th St., St. Louis, Mo.

For Rent—For Sale

Locomotive Cranes

2—Type "B" McMyler, 8-wheel, standard gauge, bucket operating, 50-ft. boom. One year old.
2—Erie Type "B" Traction Wheel, 32-ft. boom.

Locomotives

1—18x24 50-ton, 6-wheel Switcher, standard gauge.
4—21x30 95-ton Consolidations, standard gauge.
3—10x16 18-ton Saddle Tank, 36-in. gauge.

Steam Shovels

1—Model 31 Marion, caterpillar traction, high lift boom, 22 ft. 6 in., dipper stick 18 ft. 6 in., ¾-yd. dipper. One year old.
2—Erie Type "B," traction wheels, ¾-yd. dipper.
2—Marion 28, traction wheels, 5/8-yd. dippers.
1—Thew Model "O," traction wheels, ½-yd. dipper.
4—Marion 60, standard gauge, 2½-yd. dipper.
1—Marion 70, standard gauge, 2½-yd. dipper.

Cars—R. R. Ditchers—Buckets—Pumps, Etc.

ALL OF ABOVE LOCATED AT OUR SHOPS, PITTSBURGH

H. KLEINHANS COMPANY
Union Trust Bldg., Pittsburgh, Pa.

Merriman Asphalt Plant

We have for sale a rebuilt Merriman One-Car Steam Melting Asphalt Plant. It has just been rebuilt and is in fine condition and ready for delivery.

Here's your chance to get a real asphalt plant at a price that is right. Better get in touch with us quickly.

The East Iron & Machine Co.
Lima, Ohio

FOR SALE

ASPHALT PLANT

1—1850 sq. yd. Semi-portable Cummer, with two 12-ton capacity asphalt melting kettles, with 35-hp. Farquhar boiler and engine plant in A-1 shape.

The Public Works Construction Company
Wiggins Block, Cincinnati O.

FOR SALE
At a Sacrifice

ASPHALT PLANTS

2—Merriman. Price low for quick sale.

P. O. BOX 1488, GREENSBORO, N. C.

FOR SALE

CONTRACTORS' PLANT

Locomotive Cranes, Derricks, Concrete Mixers, Steam Shovels, Locomotives, Cars, Rails, Hoisting Engines, Electric Hoists, Cableways. All necessary equipment for complete plant.

JOHN M. GREENE
261 Drexel Bldg. PHILADELPHIA, PA.

1924 will be a year of contentment and joy—

for the contractor who plants his jobs with reliable DECO Rebuilt Equipment.

M. Davis

DECO REBUILT

"DECO"
Protects the Purchaser

LOCOMOTIVE CRANES

1—40-ton Industrial, 80-ft. boom.
* 1—25-35-ton, Type J. McMyler, with new A.S.M.E. boiler. 50-ft. boom. Bucket operating.
1—30-ton Ohio, 50-ft. boom.
* 3—25-ton Brownhoist, broad gauge, 1 electric and 2 steam.
1—25-ton Industrial, 70-ft. boom.
1—20 ton Brownhoist, 8-wheel, bucket operating.
* 1—20-ton Browning, 8-wheel, 50-ft. boom. Bucket operating.
* 1—15-20-ton Ohio, 50-ft. boom.
* 1—Osgood 7½-ton, 4-wheel, standard gauge, 40-ft. boom. Bucket operating.
* 3—Osgood 7½-ton, 4-wheel, standard gauge, 40-ft. boom. Single line.
1—Erie, 36-ft. boom, ¾-yd. c.s.
1—205 P & H, gasoline, c.s. and d.l. bucket.

DRAGLINES

2—Class 24 Bucyrus, 100-ft. booms.
1—Class 175 Bucyrus, 125-ft. boom.
1—3-T Monighan Walker, 60-ft. boom.
1—Class 9½ Bucyrus, 60-ft. boom.

STEAM SHOVELS

Caterpillar Type

1—Marion 31, High lift or standard.
1—Marion 28, High lift.
1—Osgood 29, High lift.
1—Osgood 18, High lift or standard.
1—Erie B.

STEAM SHOVELS—Cont.

Traction Type

2—Erie ¾ High lift, 1 year old.
1—Thew ¾ High lift, 1 year old.
6—Erie, Osgood, Marion, Thew ¾ yd.

Railroad Type

Marion 40, 41, 60, 70, 92.
Osgood 43, 69, 73.
Bucyrus 45C, 70C, 95C, 175.

TRACTORS

2— 5-ton Holt Caterpillar.
1—10-ton Holt Caterpillar.

LOCOMOTIVES

1—63-ton Baldwin Mogul.
* 1—50-ton, 6-wheel switcher, I.C.C. condition.
* 1—30-ton, American, 4-wheel S. T. air brakes.
1—28-ton Porter, Std. gauge.
1—25-ton Baldwin. Almost new. Standard gauge, gasoline. Cost $25,000. Will sell at a bargain.
* 1—21-ton, Vulcan. Standard gauge. New A.S.M.E. boiler.
* 1—21-ton, Vulcan, 36-in. gauge, S. T.
2—18-ton Vulcan, 30-in. gauge.
* 1—12-ton Baldwin, 36-in. gauge, S.T.

DUMP CARS

*20—Western 1-2 yd. air dump cars.
9—K. & J. 16 yd. Automatic.
*50—Western and K. & J. 4-yd., 36-in gauge.
10—4-yd., 30-in. gauge.
20—Western and Koppel, 6-yd. Standard gauge.
20—Western 1-2 yd. All steel. Hand dump.

OVERHEAD CRANES

Ton	Span Ft. In.	Make	Motors	Control
5	33-5	Niles	3-220 VDC	Cage
15	54-3	Niles	3-550 VDC	Cage
20	46	Shaw	4-220 VDC	Cage
20	75	Shaw	4-220 VDC	Housed
25	78	Niles	1-550 VDC	To suit
30	59-6	Morgan	4-220 VDC	Cage
40	48	Alliance	4-220 VDC	Cage

1—Jordan Spreader
1—Western Spreader
1—Western 36-in. Gauge

* *"DECO" Rebuilt Equipment*

Davis Equipment Company

50 Church Street **Tel. Cortland 2895** **New York City**

823 H. P. Stirling Water Tube Steam Boilers

From the Old Hickory Powder Plant, Old Hickory, Tennessee. Used less than ninety days, and in excellent condition. Inspection invited.

OFFERED AT MONEY SAVING PRICES

SPECIFICATIONS

Class M-30, each unit having 8226 sq. ft. heating surface, in accordance with following specifications and A.S.M.E. Code.

The heating surface of each boiler consists of three steam and water drums and a mud drum, as follows:

3—Steam Drums 42-in. diameter, 17-ft. 1⅝-in. long, ⅝-in. plate.
1—Mud Drum, 48-in. diameter, 16-ft. 7⅝-in. long, 1-in. plate.

Drums connected by 630 tubes, 3¼-in. diameter, connections made by expanding wrought tubes into reamed tube seats.

Space occupied by each boiler 18-ft. wide, 23-ft. 3-in. deep, 29-ft. 9-in. high.

DRUM CONSTRUCTION

All flanges for blow-off, feed, safety valve and water column connections made of wrought steel and riveted to the drums. The cylindrical portions of each drum made of a tube plate and a shell plate. Longitudinal seams double riveted, butt joint, circular seams, single riveted, lap joint.

TUBES

Tubes, 3¼ in., hot rolled, seamless steel, No. 10 gauge, for working pressure of 180 pounds to and including 225 pounds. Spaced alternately wide and narrow to facilitate replacement.

VALVES AND FITTINGS

Each boiler supplied with the following valves and fittings:
4—4½-in. Safety Valves, nickel seat, set to blow at 200 pounds.
1—15-in. Ashcroft Steam Gauge with 12-in., 400-lb. dial.
1—Water column fitted with bronze mountings for glass water gauge with special shut-off device operated from fire-room floor to allow renewal of glass under pressure. Three try cocks with lifting handles for operating from fire-room floor, fitted with steam metal valves. Independent blow-off pipes from bottom of column and glass gauge, carried down the front, terminating in the ash pit, fitted with valves at height of hand.
1—3-in. Hancock Bronze Stop Valve and one 3-in. Hancock Bronze Check Valve for feed.
2—2½-in. Blow-Off Valves and two Stop Cocks.
2—2½-in. Bronze Stop Valves on steam dusting hose connection.

STOKER ENGINE

1—8x8-in. Buffalo Vertical Engine, single acting, inclosed type, Class A, rated at 32 hp., 350 r.p.m., equipped with one 2½-in. Buffalo governor. Engine and accessories by Buffalo Forge Company.

Write for Special Bulletins

on New and Used Equipment at Old Hickory Powder Plant.

No. 7 Tanks
No. 8 General Equipment
No. 11 Blowers Equipment
No. 12 Industrial Railway
No. 20 Scales.

Write for illustrated folder and prices.

FIXTURES

A full set of cleaning and ash doors and frames for side and rear walls, giving access to all parts for exterior cleaning. A large circular door and frame for access to mud drum manhead.

One cast iron damper box, damper and operating rig all supported from boiler structural supports, arranged for connection to horizontal breaching in rear, and operated from front of boiler.

Necessary buckstays and tie rods for securing all parts in position, and supports for baffle walls.

WORKING PRESSURE

The boilers were constructed for a working pressure of 200 pounds per square inch. All drums were tested and made tight under hydrostatic pressure of 300 pounds. When erected complete the boilers were tested and made tight under hydrostatic pressure of 250 pounds.

ACCESSORIES

Accessories furnished in addition to those mentioned:
1—8-in. Foster Non-return Valve.
1—6 Element Vulcan Soot Blower complete with all piping and valves.
1—Bailey Flow Meter, Type D-25, Class 56; rated flow 28,000 pounds per hour; maximum flow 70,000 lbs. per hour.

STOKERS

8-Retort Westinghouse Double Dump Underfeed Stoker, with line shaft, sprockets, transmission guards, extension coal hopper, etc.

FAN AND TURBINE

1—Buffalo Turbo-Conoidal Fan, Type T-D 9½, double inlet. Capacity 100,000 cu. ft. per minute at 6-in. water pressure and 970 r.p.m. Driven by 225-hp. horizontal multi-stage, non-condensing Moore turbine and reduction gear. Gear ratio, 3600 r.p.m.—970 r.p.m. Throttle valve 3 in. Steam consumption at 180 hp.—31.6 pounds; at 225 hp.—33.2 pounds.

OLD HICKORY POWDER PLANT, Old Hickory, Tennessee

CRANES

2—20-ton **Brown Hoist**, double drums, 45-ft. booms.
1—20-ton **Ohio**, double drums, 50-ft. boom.
1—20-ton **Link Belt**, double drums, 50-ft. boom.
1—25-ton **Browning**, double drums, 60-ft. boom.
1—25-ton **Industrial**, double drums, 50-70-ft. boom.
1—25-ton **McMyler**, double drums, 45-65-ft. boom.
1—30-ton **Ohio**, double drums, 50-ft. boom.
1—40-ton **Industrial**, double drums, 50-70-90-ft. boom.
1—Type B **Erie** Caterpillar, 40-ft. boom.

STEAM SHOVEL

1—Type B **Erie**, full revolving, new 1923, all steel caterpillar, A.S.M.E. boiler, ¾-yd. dipper; high lift boom 21 ft.; dipper handle 15 ft.; boom hoist, used 3 months, guaranteed perfect condition.

GREY STEEL PRODUCTS CO.
111 Broadway, New York, N. Y.

FOR SALE

Cranes—Shovels

1—No. 45 Bucyrus, 1¾-yd. **R.R. Steam Shovel**, in A-1 used condition. Price, $4500. Located Minnesota.
1—No. 1-T Monighan **Gasoline Dragline**, 1-yd. Page bucket, 50-ft. boom. New walker just installed.
1—7-ton O. & S. **Crane**, 35-ft. boom, ¾-yd. clam shell; used only 6 months. Price with bucket $4,200.
1—21-E Foote **Caterpillar Paver**, boom and bucket. Used only 9 months, $4,500.
1—Keystone No. 6, just overhauled, $3,200.
1—**Stiff Leg Derrick**, Amer., 7x10 double drum hoisting engine, 60-ft. boom, 36-ft. mast. Located Southern Illinois.

G. C. WILLIAMS
28 East Jackson Blvd., Chicago, Ill.
Phone, Wabash 9327.

FOR SALE

Locomotive Cranes

2—Browning, 20-ton, 8-wheel, 65-ft. boom—Portland, Maine.
1—Browning, 15-ton, 8-wheel, 38-ft. boom—Townley, N. J.
1—O. & S. 15-ton, 8-wheel, 50-ft. boom—New York.
1—Interstate, 15-ton, 8-wheel, 50-ft. boom—Townley, N. J.
1—Brownhoist, 20-ton, 8-wheel, 40-ft. boom—Townley, N. J.

Hoisting Machinery Co.
50 Church St., New York, N. Y.

LOCOMOTIVE CRANES, ETC.

No. 3 Byers, 32-ft. boom, ¾-yd. bucket, steam.
BYERS AUTOCRANE, 30-ft. boom, 1-yd. bucket.
GYRATORY and ROLL CRUSHERS.

STEAM SHOVELS

Model 28 MARION, ⅝-yd. dipper, railway type.
3—Model 60 Marion, 2½-yd. dipper, rway. type.
225-B Bucyrus Electric Shovel, 5-6-8-yd. buckets.
No. 0 Thew and No. 31 Marion.

BOILERS, AIR COMPRESSORS, ETC.

50—5000-ft. Air Compressors, steam and electric.
100-hp., 125-150-lb. Boiler, encased type.

HOISTS, ETC.

25 and 50-hp. Elec. Hoists, D.D. Dragline, 440-v., 60-cy., 3-ph. Motors.
100-hp. Thomas, 2 speed, 220 v., 3 ph., 60 cy
No. 3 GYRATORY PORTABLE CRUSHER.
6-8-10 and 12-in. Pump, Water and Gravel.

ROSS POWER EQUIP. CO.
Indianapolis, Ind.

FOR SALE

Farrell Jaw Crusher

1—36x18, first class condition, Manganese fitted.

INTERSTATE CRUSHED STONE CO.
Springfield, N. J.

BUY NOW and SAVE!

These items represent an investment amounting to thousands of dollars. We have concluded to turn this stock into ready cash in the shortest possible time. Everything is offered for

IMMEDIATE SALE!

To do this we realize that we must make our prices so attractive that alert buyers will be quick to snap up these wonderful values.

What Can You Use?

1—95-ton **Bucyrus Railroad Type Steam Shovel**, with 5-yd. Dipper.
3—70-ton **Bucyrus Railroad Type Steam Shovels**, with 2½ yd. Dippers.

Above Shovels are rebuilt—

Available for prompt shipment

60—12-yd. **All Steel Hand Dump Cars**—Standard Gauge.
1—10-in.x16-in. **Buchanan Jaw Stone Crusher.** Style "B." Mounted on Trucks.
1—**Kent Crushing and Pulverizing Mill.**
1—9-in.x10-in. No. 924 **Goulds Triplex Vertical Power Pump.** single acting. Iron plungers. Capacity 350 gals. per minute, pressure up to 100 lbs., 6-in. suction, 5-in. discharge. Tight and loose pulleys 20-in.x8-in.
1—8-in.x8-in. **Deane Triplex Vertical Power Pump.** Capacity 235 gals. per minute, 6-in. suction, 5-in. discharge, tight and loose pulleys, 30-in.x7-in.
1—10-in.x6-in.x18-in. **Cameron Steam Pump.** Capacity 175 gals. per minute, 4-in. suction, 3-in. discharge.
1—14-in.x10¼-in.x10-in. **Worthington Duplex Steam Pump.** Capacity 700 gals. per minute, 8-in. suction, 7-in. discharge.
1—**Rotary Drum Sand Dryer.** Drum 36-in. dia., 15 ft. long. Equipped with coal or wood burning furnace.
2—7½-in.x10-in. **Dake Double Cylinder Steam Hoists**, with single geared drum. Equipped with reversing throttle valve.
1—24-in. **Horizontal Centrifugal Pump**, 24-in. suction, 24-in. discharge, suitable for head up to 50 ft. Belt pulley 32-in.x20-in. Manufactured by Kingsford Machine Company.
1—10-in. **Horizontal Centrifugal Pump**, 12-in. suction, 10-in. vertical top discharge, suitable for head up to 50 ft. Belt pulley 18-in.x15-in. Manufactured by Fulton Machine Company.
1—10-in.x16-in. **Erie City Automatic Center Crank Steam Engine**—50 hp.
500 Ton **I-Beams, Channels, Angles, Re-inforcing Rods, Etc.**
300 Ton **New Steel Plates**, 7/16-in., ½-in., 9/16-in. thick, 18-in. to 48-in. wide, 14 to 24 ft. lengths.
6—30-in. dia. 70-ft high **Steel Self-Supporting Smoke Stacks.** Lower half made of ¼-in., upper half 3/16-in. plate. Bell bottom 48-in. dia., with heavy cast iron base plates.
4—7000-gal. **New Steel Storage Tanks.** Square. Size 6-ft. 9-in.x 10-ft.x16-ft. 3-in. Thickness of plate ⅜-in. Weight about 17,000 lbs.

HARRIS BROTHERS CO.
35th and Iron Streets
CHICAGO

A Service You Will Appreciate

My business is more than merely buying and selling used cranes. It is knowing exactly what service cranes are capable of and how different types should be used. When you are in the market for a locomotive crane, I can help you select the one best suited for your needs—and probably save you money on your purchase.

Philip T.
KING
"The Crane Man"

Locomotive Cranes

1—Rebuilt **Industrial**, 20-25 ton cap., double drums, 50-ft. boom, outriggers, 8-wheel MCB. Like new. Guaranteed. Located Bay City, Mich.

1—23-ton **McMyler**, 8-wheel MCB., double drums, 45-ft. boom, with 7½ kw. Engberg Generator. Located Buffalo, N. Y.

1—20-ton cap. **Brown Hoist** single drum, 40-ft. boom, 8-wheel M.C.B. Located Philadelphia, Pa.

1—20-ton cap. **Industrial**, 8-wheel MCB., double drums, 50-ft., boom, 1½ yd. clamshell bucket. Located La Salle, Ill.

1—25-ton cap., Model "E" **Ohio**, 8-wheel MCB., double drums, 50-ft. boom, **Brand New.** Located Bucyrus, Ohio.

1—30-ton cap. Model "F" **Ohio**, 8-wheel MCB, double drums, 50-ft. boom. Overhauled; like new. Located Hartford, Conn.

1—7½-ton cap. **Osgood**, double drums, 4-wheel, standard gage, 40-ft. boom. Located Kingston, N. Y.

FOR RENT

I will rent any of my Cranes on a straight rental basis or with a view to purchase. Terms exceptionally favorable to you.

Philip T. KING 30 Church St. New York

SELECTED ITEMS

From Our Large Stock of New and Overhauled Equipment

1—9x10 American Hoist 3-drum double cylinder with boiler, 100 lb. steam pressure, New York certificate.

1—8¼x10 Lidgerwood Hoist, 3-drum double cylinder, with A.S.M.E. boiler, New York or Penn. certificate.

1—8¼x10 Lidgerwood Hoist, D.D.D.C. with boiler (Mass. Standard).

1—7x10 Lidgerwood Hoist, D.D.D.C. with boiler and geared swinger attached, 100 lb. pressure, New York State.

1—7x10 Stroudsburg Cableway Hoist D.D.D.C. reversible link motion, with Mass. boiler.

1—7x10 Mead-Morrison D.D.D.C. Skeleton Hoist.

1—7x10 Mead-Morrison S.D.D.C. Skeleton Hoist.

1—6½x10 Lambert D.D.D.C. Hoist, with boiler, New York State certificate, 100 lb. pressure, geared swinger attached.

2—5½x8 American Hoists, D.D.D.C., with boilers and geared swingers.

Also Forms, Graders, Concrete Mixers, Road Pumps, Shovels, Buckets, etc. Write for complete list.

THE HUBBARD-FLOYD CO., Inc.

MAIN OFFICE: 452 Lexington Ave., New York, N. Y. Vanderbilt 1465
BOSTON OFFICE: 110 High Street. Main 4233

PUMPS

1—"New" 10-in. Hill Centrifugal direct connected to 4 cylinder gasoline motor, 4x6-in. cylinder. **"New."**

Motor Driven Centrifugals

4—3 in., 2½ hp., 220 v. D.C.
1—5 in., 10 hp., 220 v. D.C.
1—4 in., 10 hp., 220 v. A.C.
1—4 in., 15 hp., 220 v. D.C.
2—6 in., 35 hp., 220 v. D.C.
2—8 in., 35 hp., 220 v. D.C.

A. J. O'Neill Company

1524 Chestnut St., Philadelphia, Pa.

FOR SALE

100,000 lbs. Capacity Flat Car

38 ft. long, steel underframe.
First class condition. Immediate shipment.

ZELNICKER IN ST. LOUIS

We Buy and Sell Rails, Cars, Steel Piling, Etc.

LOCOMOTIVES, NEW

30-in. and 36-in. gauge, 23 tons, Tractive Power 9170 lbs. Coal, oil or wood burners.

Very Attractive Prices

R. POLIAKOFF
709 Sixth Ave., New York, N. Y.

FOR SALE AT A BARGAIN

CORLISS ENGINES

2—Monarch Cross Compound, size 16x32x42 in., built for 160-lb. steam pressure, and 85 r.p.m. Manufactured by H. N. Strait Mfg. Co. Are in good condition. May be seen in operation.

Kansas Portland Cement Co.

1608 Federal Reserve Bank Bldg.,
Kansas City, Mo.

FOR SALE OR RENT

STEAM SHOVELS

1—Model 29 Osgood, revolving, Shop No. 1118, mounted on caterpillars, 30-ft. boom, 20-ft. dipper handle, ¾-yd. dipper.
3—70C Bucyrus, Railway type, Shop Nos. 1457, 1499 and 1582, standard gauge, 2½-yd. dippers.
1—Little Giant, Railway type, standard gauge, equipped with standard boom, 1¼-yd. dipper.
1—Model 28 Marion, Shop No. 2804, revolving, traction wheels, standard boom, ¾ yd. dipper.

AIR COMPRESSORS

8—Sullivan, belt driven, 20x12x14 in., displacement of 1100 cu. ft. air per minute, 110 lbs. pressure. Machines complete with lubricators, automatic unloaders and wrenches.

DERRICK

1—Timber Stiff-Leg Derrick complete, 60-ft. boom, with all cables, double cylinder, double drum, Lidgerwood hoist and vertical boiler.

CHANNELERS

20—Sullivan Stone Channelers, cyl. 8 in. diam., depth of cut without change of steel 3 ft. Weight 24450 lbs.

TRACTORS AND TRAILERS

1—10-ton Holt Caterpillar Tractor.
1—5-ton Troy Trailer.
24—Troy Wagons, 4-yd., reversible spreader type, practically new.

DRAGLINES

1—Class 14 Bucyrus, skids and rollers, steam operated, 60-ft. boom, 2-yd. bucket.
1—Class 14 Bucyrus caterpillars, steam operated, 60-ft. boom, 2-yd. bucket.
1—Class 20, Bucyrus, steam operated, special over size Johnston Bros., butt-strapped boiler, skids and rollers, 85-ft. boom 3½-yd. bucket.
1—Class 24, Bucyrus, steam operated, skids and rollers, 100-ft. boom, 3½-yd. bucket.
1—Class 24 Bucyrus Electric skids and rollers, 100-ft. boom, 3½-yd. bucket.
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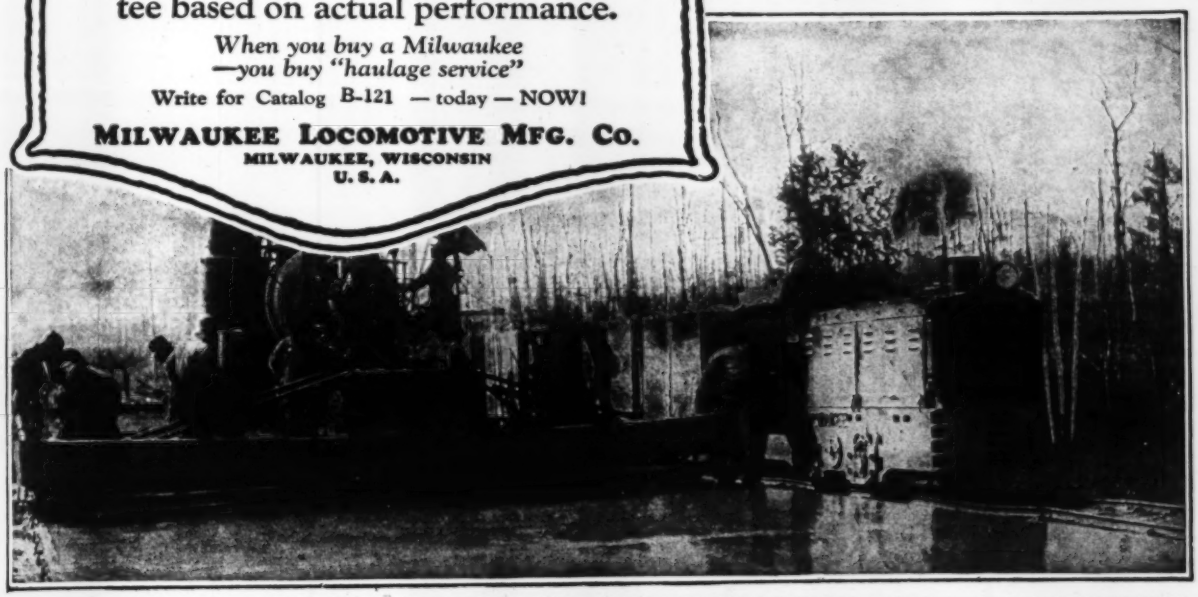

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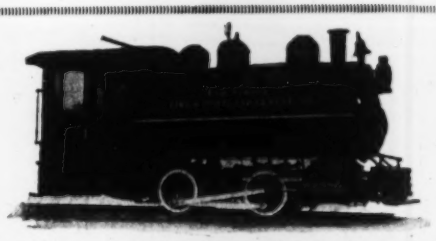

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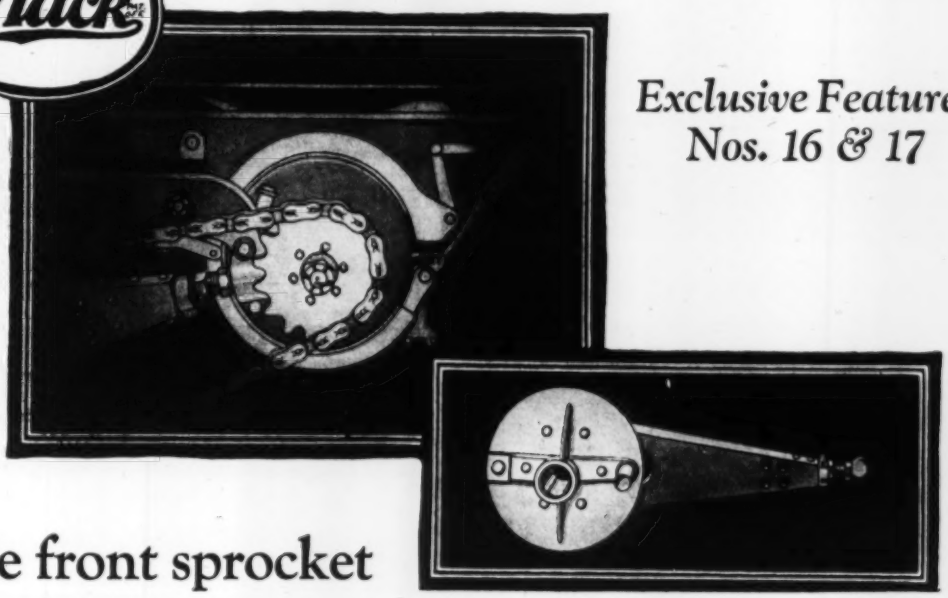

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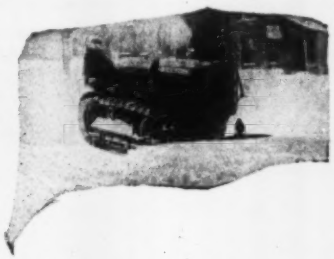

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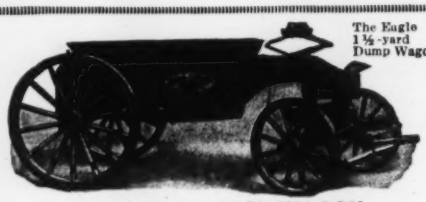

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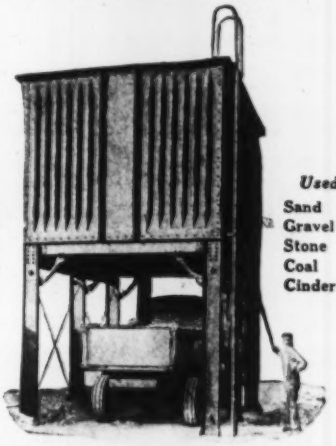

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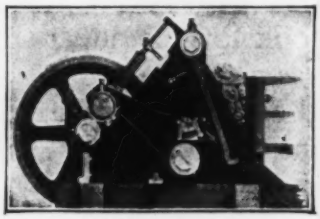

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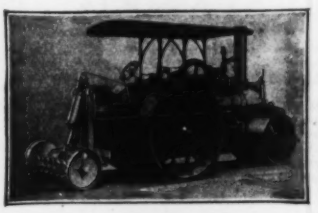

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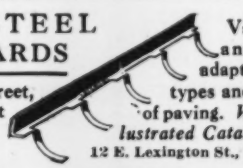

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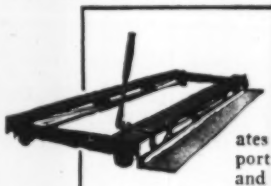

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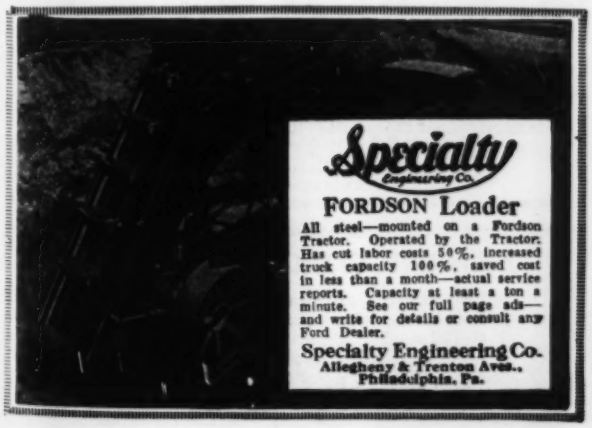

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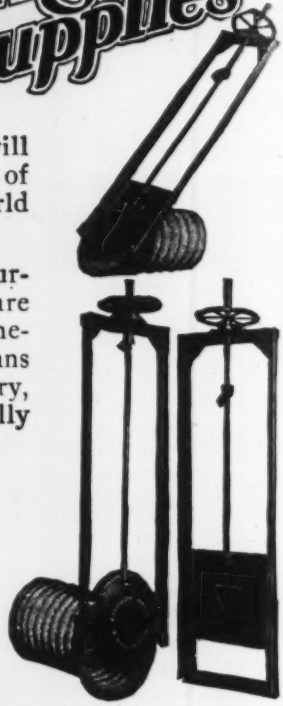

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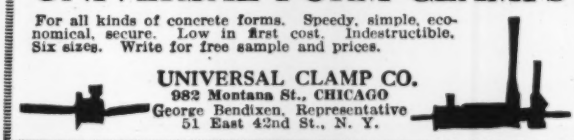

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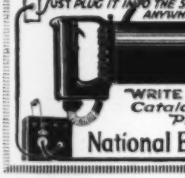

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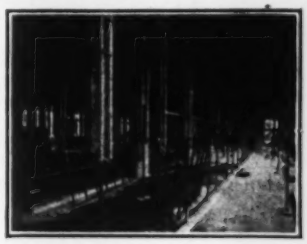

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CORRUGATED *ZINC* SHEETS
Pure Zinc
The most economical and durable roofing and siding material for all industrial and railroad buildings. Write for samples and specifications.

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Established 1870

CEMENTILE ROOFS
The FIRST COST is the LAST
AMERICAN CEMENT TILE MANUFACTURING CO.
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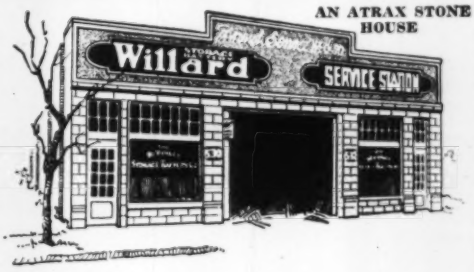
ATRAX CONSTRUCTION

AN ATRAX STONE HOUSE



Everybody Wants *Stone* Construction

—now everybody can afford it

Stone construction is admittedly the longest-lived, fireproof, economical in service and of higher value. And now the Atrax Plant makes it possible to secure stone of any finish, for building, at no greater cost than wood. Here is a real proposition for builders—for Sand and Gravel contractors—

TURNS SAND PIT INTO GOLD MINE

Write us for details of the Atrax proposition. Let us point out in detail its economy, simplicity and profits. Let us tell you where you can see Atrax Houses.

ATRAX CORPORATION OF AMERICA

8 West 32nd St., New York City

ATRAX CONSTRUCTION

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No more dusting and wearing of the concrete floors in your factory. Just flush on

LAPIDOLITH
TRADE MARK

the liquid chemical hardener which has been the standard for twelve years.

Lapidolith makes concrete floors non-absorbent and resistant to acids and alkalis.

Look over your floors. If they dust apply Lapidolith.

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Dept. 6, 116 Fifth Avenue, New York

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STEEL CONSTRUCTION FOR LIGHT AND VENTILATION IN BUILDINGS

SIDE WALL STEEL SASH

All types for factory, power house and office. Continuous steel sash for monitors and sawtooth construction. Operating devices for all types of movable sash and doors. Steel skylight and ventilators, steel office partitions, hinged steel doors, sliding steel doors.

ALLISON STEEL PRODUCTS CO.
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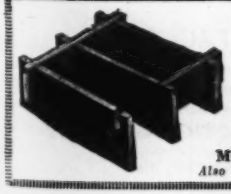

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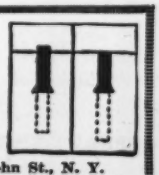
INTERLOCKED GRATINGS

No bolts. No rivets. No bent metal. Every joint locked by metal spread in dovetail. No clogging. Write for data. See half page advertisements.



Mitchell-Tappen Co., 15 John St., N. Y.

Also makers of "S.M.C." for fireproofing structures.

R.I.W.

REMEMBER IT'S WATERPROOF

REG. U.S. PAT. OFF.

Swimming Pool Peru State Normal School and Teachers College, Peru, Nebraska.

POUR CONCRETE *with* PLUGGED PORES

After you have *finished* pouring concrete floors, walls, bridges, piers, etc., there is no use *wishing* you had waterproofed them. Eliminate porosity by using—

R.I.W.
INTEGRAL WATERPROOF

TOXEMENT

—a scientific powder which lubricates concrete, increases its workability, plasticity and flowability, and waterproofs thoroughly.

Also furnished in paste form for waterproofing cement mortar and stucco.

There's a special "R. I. W." Protective Product to protect all structural materials under every known condition of service.

Write Dept. R for information on "the right paint or compound for your purpose."

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Established 1848 **Incorporated 1922**

TECHNICAL AND SCIENTIFIC PAINT AND VARNISH MAKERS

110 EAST 42ND STREET, NEW YORK

Opposite the Grand Central Terminal

WORKS: LONG ISLAND CITY, N. Y.

CONCRETING IN WINTER
SAFE — ECONOMICAL

FREE PAMPHLET

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WEBER
INTRUSION
WORK
and Improved Cement Grouting

for water-elimination in tunnels and mineshafts, sealing of dams, reservoirs, closing of water bearing rock, springs, etc., and consolidation of ruptured concrete and masonry.

CEMENT-GUN WORK
of every description

especially for lining of tunnels, mineshafts and reservoirs, encasing of structural steel work, bridges, tanks, chimney and repair of disintegrated masonry and concrete.

High class work at low prices.

Write us for literature and further information

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Business Established 1832
The Lawrence Cement Co.
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Selling Agents for
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PORTLAND CEMENT
In Successful Use a Third-Century

PENNSYLVANIA
PORTLAND CEMENT
Highest Quality

Manufactured by
Pennsylvania Cement Co.
New York Boston Philadelphia Buffalo

"CEMENT GUN" WORK
TRADE MARK
Contracting—Renting—Managing—Operating
BUILDINGS—DAMS—RESERVOIRS—BRIDGES
Estimates and Bids Promptly Furnished
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Contracting Dept., Cement Gun Co., Inc.
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Fulton Bldg., Pittsburgh, Pa.; Chamber of Commerce Bldg., Chicago, Ill.; 30 Church St., New York City.

We Do the Work
with
CEMENT - GUNS
Get our prices and estimates before contracting, renting, buying or selling.
Cement-Gun Construction Co.
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ANTI-HYDRO WATERPROOFING
FOR PERMANENT CONCRETE
FOR HARDENING & WATERPROOFING CONCRETE
A liquid integral hardener makes concrete dustless and waterproof. Used successfully for nineteen years. Write for details.
ANTI-HYDRO WATERPROOFING COMPANY, Newark, N. J.

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Engineering—Contracting—Renting—Operating
Estimates Promptly Furnished
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Cement Gun Department—Barclay A. Greene, Mgr.
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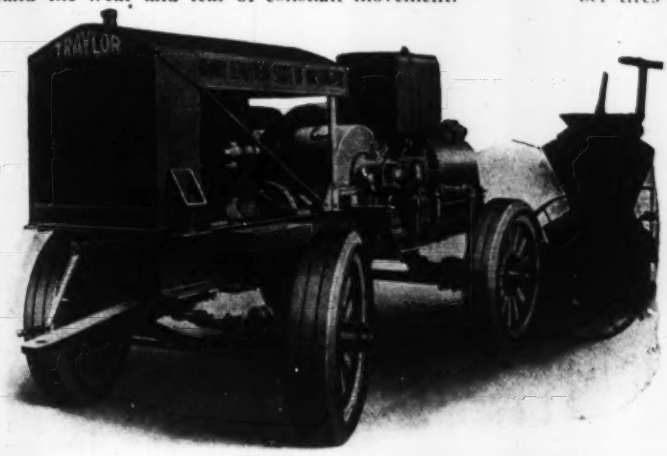
Get a Compressor You Can Keep on the Move

TRAYLOR

Get a compressor that will go to the point wanted—from job to job—or here and there on the job—and stand the wear and tear of constant movement.



Made in two sizes. Also mounted on standard iron wheels, if desired

Get a Traylor Portable Compressor. Note the heavy, substantial wheels, the *shock-absorbing* rubber tires and axles and springs. The Traylor will handle all kinds of pneumatic work. Horizontal "straight-line" type—double acting; spiral gear drive—slow speed—vibrationless—needs no blocking up. For electric or gasoline operation. Pump for supplying water under pressure.

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for every purpose

ELEVATOR BUCKETS (plain and perforated) STACKS AND TANKS
GENERAL SHEET AND LIGHT STRUCTURAL WORK
LIGHT AND HEAVY STEEL PLATE CONSTRUCTION

HENDRICK MFG. CO. CARBONDALE, PENNA.
New York Office, 20 Church St. Pittsburgh Office, 544 Union Trust Bldg.
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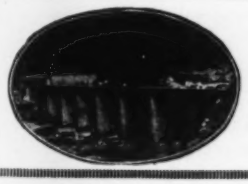

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Best for Any Foundation

High Safety Factor Low First Cost
Rapid Construction No Maintenance

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Cost Data, Literature, Photos.

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Engineers—Constructors—Managers

Design, Estimates, Supervision, Operation and Management, Examination and Reports

What's the life of your Steel Sheeting?

UNION·PILE·HAMMERS
DRIVE AND PULL

THE present cost of steel sheeting prohibits leaving it in the ground after it has served its use for cofferdams, etc.

UNION Pile Hammers

first *Drive* steel sheeting without injury and then *Pull* it so you can use it for the next job.

Photograph shows a typical instance. All you have to do, to pull with a Union, is to insert a one-way valve. Steam or air is used with no change whatsoever.

Have you a NEW Union Catalog?

UNION IRON WORKS
Lackawanna Siding, Hoboken, N. J.

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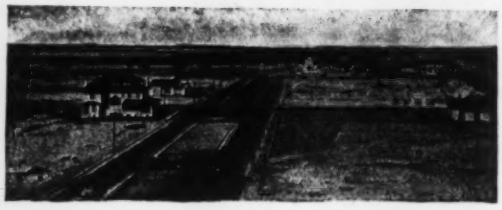

Filling, Land Reclamation, Canals and Port Works

River and Harbor Improvements, Deep Waterways and Ship Channels

We are equipped to execute all kinds of dredging, reclamation and port works anywhere in the United States.

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Largest Plant Longest Experience

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A Service Tested Wire Rope

The use of HERCULES (Red-Strand) Wire Rope on heavy duty equipment is not an experiment, for its many years of actual service have demonstrated that it is a safe and economical rope for such conditions. Its one red strand is our guarantee of constant quality.

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A. LESCHEN & SONS ROPE CO.

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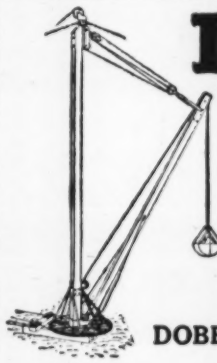

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Stocks of Fittings, Blocks, Sheaves, Winches, etc., carried by our agents:
G. S. Green Co., New York
Beckwith Machinery Co., Pittsburgh, Cleveland, Charleston, W. Va.
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DOBBIE Foundry & Machine Co.

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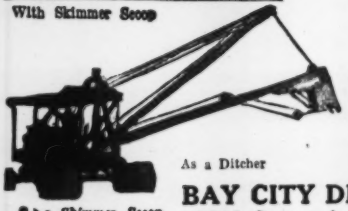
CONVERTIBLE Attachment Operates ⅝-yd. clamshell, skimmer, scoop, ditcher scoop, drag line, shovel, magnet, or hook.

With Skimmer Scoop



As a Ditcher

See Skimmer Scoop our ad in last issue.

BAY CITY CRANE EXCAVATOR

Model 16

One machine—Many uses
The Versatile Bay City never need be idle.
A profitable investment for every contractor.

Write for Circular 12

Builders of

CRANES
EXCAVATORS
LAND DREDGES

Walking, Track Crawler and Floating Type

BAY CITY DREDGE WORKS
2603 Center Ave., Bay City, Mich.

"MORETRENCH" Conveying Excavator

Digs and backfills trenches in one operation. Any size—any depth. See our big advertisement next week. Write or phone.

Moore Trench Machine Co.
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PARSONS

TRENCH EXCAVATORS—BACKFILLERS

THE PARSONS COMPANY
NEWTON, IOWA

CONSTRUCTION SPECIALTIES CO., INC.

West Ave. and Seventh St.,
Long Island City, N. Y.

We build Special Construction Equipment and Devices from your own plans. Also Light Structural Steel and Sundry Iron Work

UNDERPINNING & FOUNDATION CO., INC.

Specialists in

Pneumatic, Steel Cylinder and Concrete Pile Foundations
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DIG ROCK QUICKLY

There's a Sullivan Drill of just the right size, type and power to get rid of your rock most quickly and cheaply. *Ask for Drill booklet No. 4118.*

SULLIVAN MACHINERY CO.
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VULCAN IRON WORKS

THE WARRINGTON (VULCAN)
STEAM PILE HAMMERS
PILE DRIVERS AND PILE DRIVING MACHINERY
327 NO. IRVING AVE. ——— CHICAGO

MacArthur Piles

A Special Pile for Every Condition
Not One Pile for All Conditions

A permanent casing where necessary.

Not useless expense where a permanent casing is unnecessary.

Under most conditions a compressed shaft, taking advantage of maximum skin friction, is preferable.

BUT We Drive

Compressed straight shaft uncased Piles.
Compressed Pedestal uncased Piles.
Straight Shaft Piles with a permanent Casing.
Pedestal Piles with a permanent Casing.
Composite Piles (Wood and Concrete) with concrete section uncased.
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Open ended Steel Pipe Piles.
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If your conditions call for piles, we have the economical and efficient answer to your problem.

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SIMPLEX CONCRETE PILING, OPEN CAISSONS
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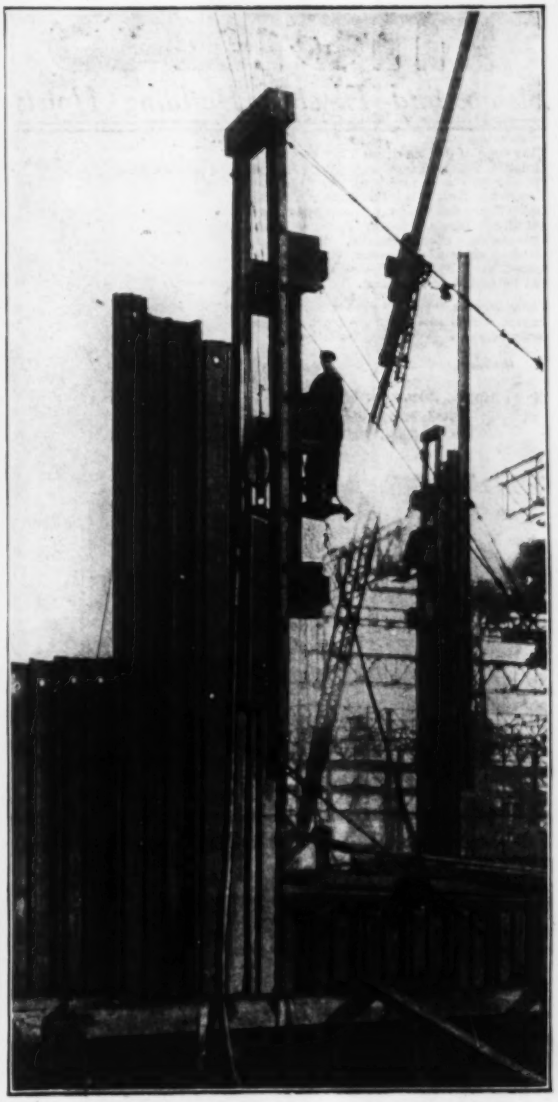

McKiernan-Terry Hammers building for the Brooklyn Edison Co.

11 Cofferdams enclosed with 15-in. steel sheet piling in 70-ft. lengths driven with 9-B Pile Hammers. Two of the five hammers used on this operation were subsequently employed for driving 14-in. timber piles 15 to 25 ft. long within the cofferdams, to grade, which submerged the hammers 30 to 40 ft. below water level.

Driving above or below water is done with equal success by the B-line of pile hammers; they are as efficient one way as the other.

Send for descriptive bulletins

McKiernan-Terry Drill Company

Rock Drills **Pile Hammers** **Lifting Jacks**
Mining and Quarrying Machinery
13 Park Row, New York

Works at Dover, N. J.

Agencies in the following Cities: Boston, Chicago, Pittsburgh, Cleveland, Detroit, St. Paul, San Francisco, Columbus, O., New Orleans, Philadelphia, Portland, Oregon. *Foreign Representatives:* British Steel Piling Co., London, England.

THOMAS

Steam and Electric Building Hoists

This type of double drum Thomas building Hoist is aiding many contractors to speed up the job and make money. Like all Thomas Hoists, it is a thoroughly well-built and dependable unit, equipped with patented band friction and automatic irreversible motor brake, turned and brushed drums, cut gears, variable speed motor, etc. Friction driven boom swinger can be added at any time.

These hoists are *built* to give the dependable service which successful contracting necessarily requires. Write for Bulletin 15.

Builders of Hoists for over 30 years

Thomas Elevator Company
24 S. Hoyne Ave.
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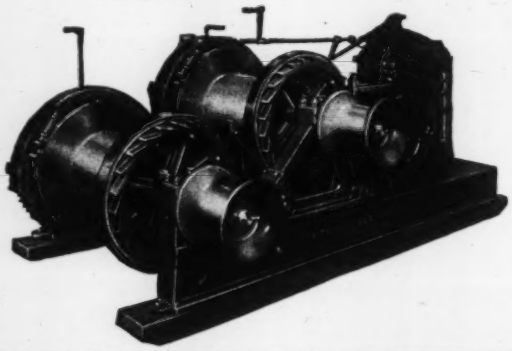
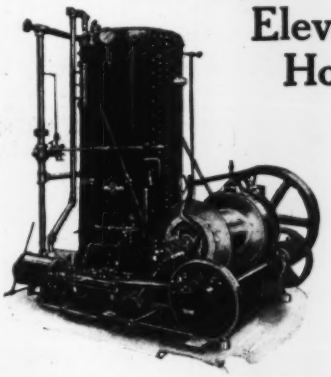


TRADE MARK
MUNDY
ESTABLISHED 1869

Brick Mason's Elevator Hoist

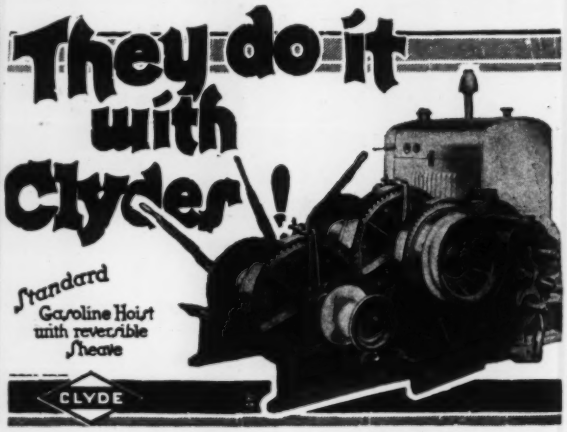


IDEAL for use in building construction for light hoisting. It is especially adapted for double elevators carrying building materials, being provided with large elevator sheave wheel clutched to the drum shaft.

Write for Catalog No. 17

J. S. Mundy Hoisting Engine Co.
Manufacturers of High Grade Hoisting Equipment
New York Sales and Export Office: 30 Church Street
Newark, New Jersey, U. S. A.

They do it with Clydes!



W. F. Creighton, president Foster & Creighton Co., Nashville, says: "We are very pleased with the two Gasoline Hoists; they are a step forward in building-industry equipment. * * * One of these has been operating a double cage brick hoist and a concrete tower at the same time. This has never been equalled by any other type of engine we have owned."

A multiple cylinder engine with silent belt chain drive—easily portable by truck and unusually economical of operation. Write for details.

You'll take pride in your CLYDE!

Clyde Iron Works Sales Company
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Sole Distributors for Clyde Iron Works

NEW YORK	NEW ORLEANS	SEATTLE	CINCINNATI
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NATIONAL

15 HP. with Le Roi Engine

Gasoline Hoists

Send for Catalog

National Hoisting Engine Co.
Office and Works:
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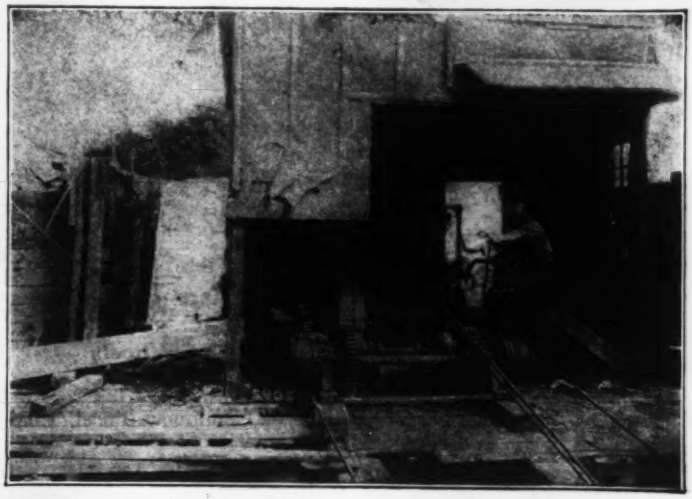
Stroudsburg Gasoline Hoists
Available from Stock

Builders of Steam, Electric and Gasoline Hoists.

Write for Bulletins

Stroudsburg Engine Works
Stroudsburg, Pa.

LIDGERWOOD HOISTS



Steam—Electric—Gasolene

for all Contractors' Uses

They Do the Work

Illustration shows a two-drum hoist with boom swinging gear, operating derrick placing granite blocks on dam walls.

Used by H. Nawn Contracting Co., in building the Gilboa Dam, New York City Water System.

CABLEWAYS—DERRICKS

Catalogs upon request.

Our engineers always at your service.

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Conserve overhead space, side clearance and runway space. They save in the building cost. *May we explain?*

The Cleveland Crane & Engineering Co.
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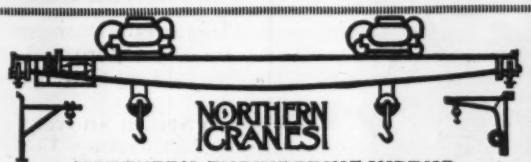
cranes

Locomotive—Crawler—Traction

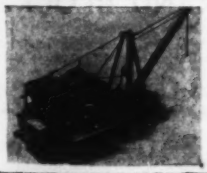
Pile Drivers—Car Dumpers
Equipment for Moving Materials

THE McMYLER-INTERSTATE CO.
CLEVELAND
Sales Offices in All Principal Cities

INTERSTATE



NORTHERN ENGINEERING WORKS.
ELECTRIC HOISTS DETROIT, MICH. U.S.A. AIR HOISTS



FLORY HOISTS
for every requirement
STEAM—ELECTRIC GASOLINE

S. Flory Manufacturing Co.
95 Liberty St., New York. Bangor, Pa.

Get a Practical Crane

Furnished in mounting and power to suit requirements of buyer.

BOOM can be raised or lowered under load while operating—this is one of the practical features, exclusive with Byers.

Write us for interesting bulletins.

***BYERS* Model 10**
Full Circle Crane

Also Auto-Cranes, Truckcranes, Buckets, Hoists, etc.

THE BYERS MACHINE COMPANY, 250 Sycamore St., Ravenna, O.

Up-to-date Machinery

OSGOOD 73—3½ yd. on Traction Wheels

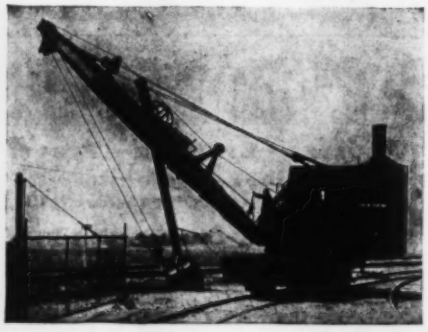
is essential to the operation of modern business. You cannot afford to fool with obsolete equipment. OSGOOD Steam Shovels are the last word in steam-shovel design. Labor-saving devices and mechanical improvements are the result of years of practical steam shovel building. You will make no mistake on an OSGOOD.

A wide range of capacities on Continuous Tread, Traction or Railroad Mountings.

1½ to 6 Cu. Yd. Railroad Type Steam Shovels

¾—1—1¼ Cu. Yd. Revolving Steam Shovels, Clamshells, Draglines and Cranes

The OSGOOD Company, Marion, Ohio, U. S. A.



With Dipper Attachment This

INDUSTRIAL CRANE

Makes a combination tool that is of great value. Dipper sizes from ¾ to 1½ yard. When equipped with standard crane, boom is available for clamshell bucket and hook work, giving maximum efficiency as a crane and a digging machine.

Our Golden Anniversary Catalog fully illustrates These Types

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Sales Engineers in all Principal Cities

1873 **BUILDERS OF CRANES FOR 50 YEARS** **1923**

"TOLEDO CRANES"

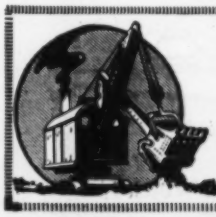
Fulfill Every Requirement
Save Time, Labor and Space

THE TOLEDO CRANE CO.
BUCYRUS, OHIO

CRANES All Types

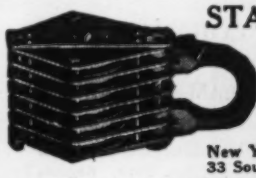
WHITING CORPORATION
HARVEY-ILL. U.S.A.
(CHICAGO SUBURB)

Foundry Equipment



——"Marions" Pioneered In Big Operations— They Still Lead

The Marion Steam Shovel Co.
Marion, Ohio, U. S. A.



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Are Standard

For any lift or difficult working condition they are safest, strongest and most durable.

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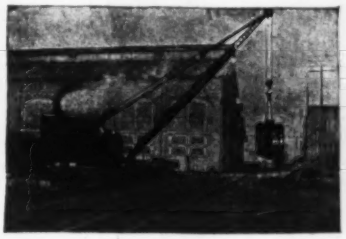
Chicago 413 Fort Dearborn Bldg.

O. S. Dependable



We build cranes of all types for all places.

They are built of the best workmanship and materials throughout. O. S. Cranes offer the correct solution to your problems.

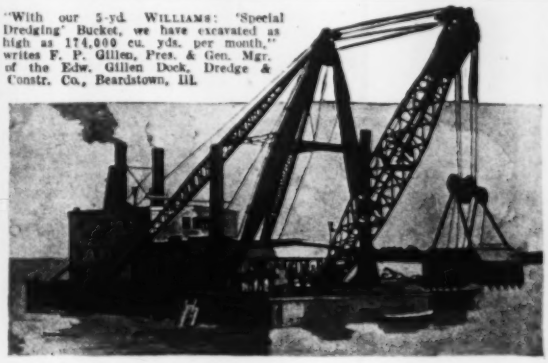
Above we illustrate an O. S. 40-ton, 8-wheel locomotive crane that is unsurpassed for simplicity and accessibility—there are few working parts and all of these are exceptionally large and strong.

Let us show you this type of Crane in action

ORTON & STEINBRENNER CO.
Offices: Chicago, Ill.
Factory: Huntington, Ind.

Cranes—Shovels—Buckets

"With our 5-yd. WILLIAMS "Special Dredging" Bucket, we have excavated as high as 174,000 cu. yds. per month," writes F. P. Gillen, Pres. & Gen. Mgr. of the Edw. Gillen Dock, Dredge & Constr. Co., Beardstown, Ill.



For any kind of hard digging—

get the bucket that gives you biggest output

The large output that you get with the WILLIAMS Special Dredging Bucket comes from its speedy action, and the power that the WILLIAMS tandem sheave closing arm gives for a big fast bit into tough materials.

Under water, a bucket runs into large boulders, imbedded timbers, etc., that finish an ordinary bucket in short time. But—

With a WILLIAMS "Special Dredging" you are protected by the WILLIAMS guarantee—"all parts guaranteed against breakage, as long as the bucket is used for the work intended."

We have a 60-page catalog that shows working photos and full descriptions of every bucket in the complete WILLIAMS line. Write for Catalog N-60.

G. H. WILLIAMS CO., Erie, Pa., U. S. A.

WILLIAMS

QUICK-ACTING CLAMSHELLS
All Parts Guaranteed Against Breakage

OHIO

LOCOMOTIVE CRANES
OHIO LOCOMOTIVE CRANE CO.

Chicago, Railway Exchange Bldg. **New York, 30 Church St.**

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Clamshell and Orange-peel Buckets

Dredging Buckets. Hydraulic Dredging Equipment. Complete Dredges. All work designed and finished in our own plant. Backed by 50 years' experience. Repairs to all types of Buckets and Dredges.

Write for new catalog—just published.

VULCAN Iron Works, Inc.
Jersey City, N. J.

HAYWARD BUCKETS

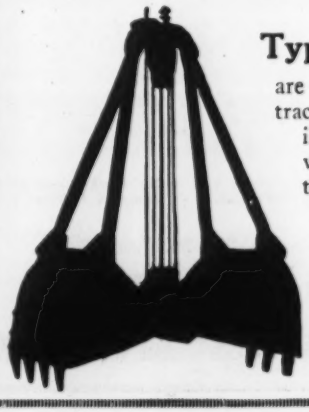
Clam Shell, Orange Peel, Electric Motor, and Drag Scraper Buckets for all excavating, dredging, and rehandling purposes. Ask for Catalog 43, or consult our engineers gratis.

The Hayward Co., 48-50 Church St., N. Y.

BUCKETS

for all kinds of digging and rehandling for any crane. Built by Master Builders.

BLAW-KNOX COMPANY PITTSBURGH PA.



OWEN
Type "J" Buckets

are designed for the Contractor. Simple and rugged in construction, less wearing parts, guaranteed against breakage, and a powerful digger. *Ask for Type "J" Pamphlet.*

THE OWEN BUCKET CO.
533 Kirby Bldg.
Cleveland, O.

HERSEY DISC METER, MODEL HF which is the Highest type of Frost protected Meter and HERSEY DISC METER, MODEL HD which is the Highest type of Divided or split-case Meter, are the product of thirty-five years' experience and refinement in the manufacture of Water Meters. These Models excel all Meters of all makes in all those essentials which go toward making exceptionally desirable Meters.

HERSEY MANUFACTURING COMPANY

Boston, New York, Chicago, Columbus, O., Philadelphia, Atlanta
San Francisco Los Angeles

"WATCH DOG"

WATER METERS

Accurate
Durable
Efficient

GAMON METER COMPANY
Main Office and Works:
NEWARK, NEW JERSEY

Number ten of a series of advertisements explaining the use of Simplex Venturi Tube Meter and its practical application

THE SIMPLEX Venturi Tube Meter

is admirably adapted for Filter Plants

Cut shows standard Simplex Meter Register connected to a Venturi tube which is inserted in the pipe line.

The present practice is to check the performance at all times of the entire plant, or any of its units, by measuring the raw water delivered to the sedimentation basin, the daily amount handled by the filters, the amount of wash water required and the gallons per day consumed by the distribution system. The Simplex meter is an ideal device to determine these data and for regulating the amount of chemical solutions that must be added to the water in proportion to the rate of flow.

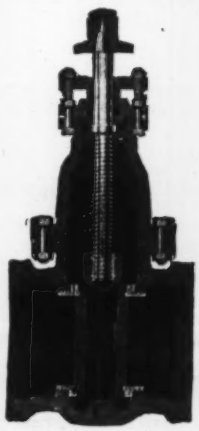
Repeat orders from many engineers and water works managers are the testimonials of the faith placed in Simplex Devices for their filtration plant.

"Simplex Installations Give Satisfaction"

Simplex Valve and Meter Company
300 Fidelity Building, Philadelphia

MANUFACTURERS OF METERS AND RATE CONTROLLERS OF THE VENTURI TYPE, GAUGES AND OTHER WATER WORKS DEVICES

LUDLOW VALVES



FEATURES

of Ludlow Double Gate Valves, one of our best known products:

1—Simple in construction—few parts.
2—No locking or wedging of gates, till directly opposite port of valve opening.
3—No grinding or dragging faces of gates on seats.
4—No binding of stem in wedge.
5—No stripping thread from stems.
6—Less wear of faces and gates.
7—Work equally well with pressure on either side of gate.

Make a "once for all" job!

Get a Ludlow Catalog

The Ludlow Valve Mfg. Co.

Troy TRADE LUDLOW MARK **New York**

BRANCHES: New York, 62 Gold Street; Boston, 112 Water Street; Philadelphia, Harrison Building; Pittsburgh; First National Bank Building; Chicago, 633-635 The Rookery; Kansas City Office, R. A. Long Building; San Francisco, Calif.; W. P. Horn Co., Rialto Building; Los Angeles, Calif., W. P. Horn Co., Kerckhoff Building.

Southern Representative:
W. F. Wilcox, 1206 Fourth National Bank Bldg., Atlanta, Ga.

"IN the elder days of art
Builders wrought with greatest care
Each minute and unseen part
For the Gods see everywhere."

—*LONGFELLOW* (*The Builders*)

TODAY that same spirit dominates the automatic machinery in the Neptune Meter Plant —for everywhere the eyes of the waterworks field are upon Trident Meters. That Trident Meters are "wrought with greatest care" is one reason why over 2,500,000 are in use today, and over 200,000 were made and sold during 1922.

Neptune Meter Company

Pioneers in Meter Progress

50 East 42nd Street, New York City

Boston Chicago San Francisco Atlanta Los Angeles Seattle Portland St. Louis, Mo.

WATER METERS

ARCTIC
Frost Bottom

KEYSTONE
COMPOUND

EUREKA
Current

KEYSTONE
All-Bronze

PITTSBURGH METER COMPANY
East Pittsburgh, Pa.

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CHICAGO—5 So. Wabash Ave.
KANSAS CITY—Mutual Bldg.
COLUMBIA—1433 Main St.
SEATTLE—4038 Arcade Bldg.
LOS ANGELES—Union Bank Bldg.

Made for maximum service not merely the average

TRADE JENKINS MARK
Jenkins Bros

Time-Tested Quality

The design and construction of Jenkins Valves represent the accumulated knowledge gained from 59 years of valve manufacturing experience.

They have proved their quality by years of unfailing valve service.

This time-tested quality is symbolized and protected by the Jenkins signature and "diamond," cast on the body. Look for these marks, they assure you of durability and dependability in valves.

Valves in bronze, iron and steel for all requirements. At supply houses everywhere.

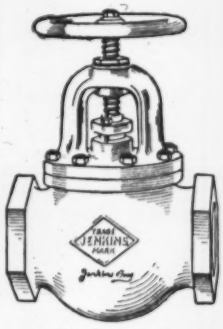

Fig. 141. Screwed, Standard Iron Body Globe Valve.

JENKINS BROS.
80 White Street.....New York, N. Y.
524 Atlantic Avenue.....Boston, Mass.
646 Washington Boulevard....Chicago, Ill.
133 No. Seventh Street, Philadelphia, Pa.

Always marked with the "Diamond"
Jenkins Valves
SINCE 1864
2827-J

PROTECT THE METERS

Winter weather need not cause trouble if

DICKEY METER BOXES

are used to house the meters. Dickey Meter Boxes are made of Vitrified Salt Glazed Clay and will not decay or disintegrate.

Write for catalog and prices.

W. S. Dickey Clay Mfg. Co.
Established 1885
Kansas City, Missouri

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ELECTRIC CONTROL UNIT
FOR THE MOTOR OPERATION OF LARGE GATE AND GLOBE VALVES
Write for Bulletins
PAYNE DEAN LIMITED
STAMFORD, CONN.
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Easily Carried By One Man

This light, durable machine will be sent on approval for 30 days trial If not as represented, send it back.

Corporation Tapping Machine

Write for latest bulletins of this and other waterworks appliances.

The A. P. Smith Mfg. Co.
East Orange, N. J.

R. D. WOOD & CO.
ESTAB. 1803
PHILADELPHIA, PA.

"Mathews" Reg. U. S. Pat. Off.
Fire Hydrants
Valves
Gate, Foot and Check
Cast Iron Pipe and Fittings, Special Castings
For Water, Gas and High Pressure Service

ROBINS CONVEYING MACHINERY

For every material handling need.

We design, manufacture and erect BELT CONVEYORS, BUCKET ELEVATORS, SKIP HOISTS, COAL AND COKE CRUSHERS, "PERFEX" SCREENS, COAL STOCKING AND RECLAIMING BRIDGES, and many other types of material handling equipment. *Write for Handbook of Conveyor Practice.*

ROBINS CONVEYING BELT COMPANY
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WORTHINGTON

Meters

Meter frozen, showing compression of frost clamps

The upkeep cost of 35,000 Worthington Model "G" meters was four cents a year. Worthington frost clamps save money in winter, too. Ask for proof.

WORTHINGTON PUMP AND MACHINERY CORPORATION
Executive Offices: 115 Broadway, New York City
Branch Offices in 24 Large Cities W.68

THE VENTURI METER
"VENTURI" Registered Trade Mark
For Water, Sewage, Gas, Air, Steam—
in fact everything that flows.
Bulletins on Request.
BUILDERS IRON FOUNDRY, Providence, R. I.

EBG Liquid Chlorine
Electro Bleaching Gas Co.
PIONEER MANUFACTURERS of LIQUID CHLORINE
Plant NIAGARA FALLS, N.Y.
Main Office: 9 East 41st Street, New York

Clean Water Mains
Deliver Full Capacity
We are glad to confer with municipal officials or Water Companies.
National Methods are patented
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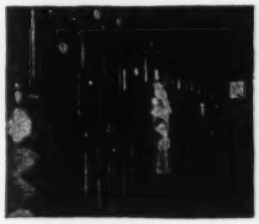
Steel Tanks and Steel Plate Work
Water Softeners, Filters and Heaters
Water Softeners for Boiler Feed-Water. Hot Process, Cold Continuous, and Zeolite Softeners. Pressure and Gravity Filters. Water Heaters. We make all successful types.
GRAVER *Corporation*
East Chicago, Indiana

ROBERTS FILTERS
WATER-*fit for use*
Filtration and Water Softening Plants
ROBERTS FILTER MFG. CO.
DARBY, PA. *New York Office. Flat Iron Bldg.*

CHLORINATION BREVITIES



A Battery of W & T Automatic Chlorinators, Presidio, San Francisco

ANY water supply may become polluted,—and pollution may cause disease—typhoid, dysentery.

A sterilized water supply guarantees that the water will not cause disease because the microbes of disease are killed.

Can any community afford not to have this protection?

WALLACE & TIERNAN
COMPANY, INCORPORATED
Manufacturers of Chlorine Control Apparatus
15 NEWARK, NEW JERSEY

WATER SOFTENING AND FILTRATION PLANTS
AMERICAN WATER SOFTENER COMPANY
4th and LEHIGH AVES. PHILADELPHIA, PA.
No affiliation or working agreement with any of our competitors

WATER SOFTENING AND FILTRATION PLANTS
INTERNATIONAL FILTER CO.
333 West 25th Place, Chicago
New York Office: Woolworth Bldg.

CF WATER FILTERS SOFTENERS STERILIZERS
Industrial-Municipal-Domestic-Swimming Pools
"BEAR BRAND" LIQUID CHLORINE
CALIFORNIA FILTER CO.
Sec. Merchants Exchange. San Francisco.

CHLORIDE OF LIME
For Purifying Water
Pennsylvania Salt Mfg. Company, Philadelphia, Pa., U. S. A.

LOCK-SEAM SPIRAL PIPE For Low Pressure Service

Made in continuous lengths up to 30 lineal feet. Smooth on inside and true to diameter. We specialize in dredging pipe. We also make welded Spiral Seam pipe of special analysis hard sheet steel for heavy duty service. Write for particulars.

For By-Products Recovery Pipes, Water Supply Lines, Irrigation, Sluicing and Dredging

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McWANE PRECALKED JOINT PIPE CAST IRON

Sizes 1¼ in. and Up

Standard fittings used. Catalog N.

McWANE CAST IRON PIPE CO.
Birmingham, Alabama

No Bell Holes

ROOT

Spiral Riveted Pipe—
Pipe Specialists for 48 years
Abendroth & Root Mfg. Co.
Works: Newburgh, N. Y.
N. Y. Office: 233 Broadway

GLAMORGAN PIPE & FOUNDRY CO.
LYNCHBURG, VA.
GENERAL FOUNDERS AND MACHINISTS
Manufacturers of
Cast Iron Pipe
For Water and Gas, Flange Pipe and Fittings
Western Office: 466 Peoples Gas Bldg., Chicago

Warren Foundry & Pipe Company
Manufacturers of
CAST IRON PIPE
SPECIAL CASTINGS
Bell and Spigot—Flanged—Flexible Joint—Culvert—Tubes—Milled and Plain Ends — Cylinders — Manhole Heads and Covers—High-Pressure Fire Service Pipe—All Sizes.
Works: Phillipsburg, N. J.
Sales Offices: Bowling Green Bldg., New York; 201 Devonshire Street, Boston, Mass.

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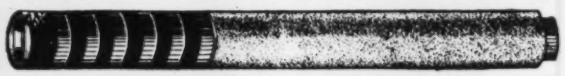
CAST IRON PIPE
USICAST CASTINGS
United States Cast Iron Pipe & Fdy. Co.
General Offices: Burlington, N. J.

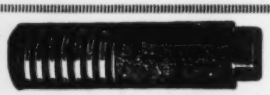
CAST IRON PIPE
AND FITTINGS
American Cast Iron Pipe Company
Birmingham, Ala.
SALES OFFICES IN PRINCIPAL CITIES

TRADE **"LEADITE"** MARK
Registered U. S. Patent Office
FOR JOINTING CAST IRON WATER MAINS
NO CAULKING
Saves 50% to 75%
Leadite Joints Improve with Age
THE LEADITE COMPANY, 1232 Land Title Bldg., Phila., Pa.



"STANDARD" WOOD PIPE
Will furnish Pipe to suit Conditions.
Standard Wood Pipe Company, Williamsport, Pa.

Nicholas Engel
JOHN FOX & CO.
Cast-Iron Water, Gas and Flange Pipe, Special Castings, Fire Hydrants, Valves, General Foundry and Machine Work.
Woolworth Building, 233 Broadway NEW YORK CITY



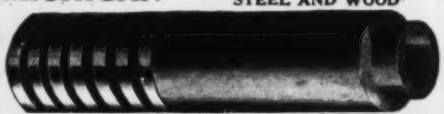
Save 25% to 50% by using
Wyckoff Wood Pipe
instead of Cast Iron Pipe
Cheaper. Lasts as long. Delivers more water. Get catalogue.
A. WYCKOFF & SON CO., ELMIRA, N. Y.
Branches: ATLANTA, GA., H. H. White, 1503 4th Nat. Bank Bldg.
"The Originators of Machine Made Wood Pipe. Established 1855."

Hand or Motor Operated Hydraulic Gate Hoists—
Standard Capacities up to 60,000 pounds
Dilts Machine Works, Inc.
Fulton, New York

CONTINENTAL (WOOD) PIPE
CONTINUOUS STAVE AND MACHINE BANDED
(Plain and Creosoted)
CREO-WOOD FLUME WOOD CONDUIT
Write for Catalog
CONTINENTAL PIPE MFG. CO.
Ballard Station, SEATTLE, WASH.
3904 Woolworth Bldg., New York

Head Gates and Gate Hoists
Standard or Special Design
DAYTON GLOBE IRON WORKS
DAYTON, OHIO

MICHIGAN COMBINATION STEEL AND WOOD **PIPE**



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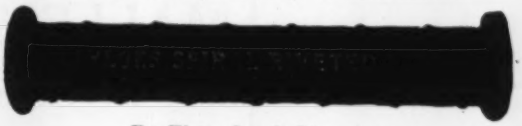
Carefully made—Cheap to lay—Costs nothing to maintain
THE MICHIGAN PIPE CO., BAY CITY, MICH.

SLUICE GATES
Shear, Flap and Butterfly Valves
FLEXIBLE JOINTS
COLDWELL-WILCOX CO
NEWBURGH N.Y.
NEW WINDSOR

SATISFACTORY RESULTS RAPID INSTALLATION ECONOMICAL OUTLAY



For Water Supply Lines for

Mines, Mills, Hydraulic Operations, Hydro-Electric Plants, Dredging, etc.

Furnished Asphalted or Galvanized from 3 to 42 inches diameter and fitted with forged steel connections

Hydraulic Giants, Flexible Joints, Valves and Fittings for complete installations

Ask for Catalogue 5 K

AMERICAN SPIRAL PIPE WORKS
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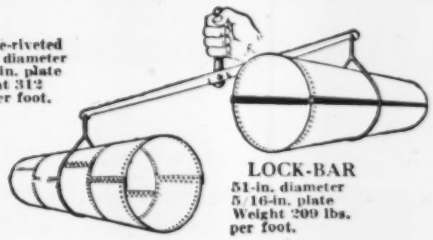

LOCK-BAR STEEL PIPE

is generally given a preference of 3 in. less diameter than riveted steel pipe for a given capacity—and will carry approximately 30% greater working pressure than riveted steel pipe of similar plate thickness. Its coefficient of friction is the same as new cast iron pipe *and never grows less.*

Altogether, a fine investment. See our full page ads. every other issue for detailed discussions. Send business card for 200-page "Handbook of Pipe."

EAST JERSEY PIPE CO.
7 Dey Street, New York City

LOCK-BAR
Before Closing
STRONG AS THE PLATE ITSELF

"Automatic"
Heavy Oil Engine
75 h.p.

(Werner System)

All the simplicity and pick-up of the best gasoline engine with the fuel economy of a heavy oil engine.

Learn how this lighter, simpler more efficient power unit can save its cost in a year on your job.

Write for details

Automatic Mach. Co.
Bridgeport, Conn.

TONS OF COAL CAN BE SAVED
if water-power users would replace their antiquated and inefficient water wheels with SMITH TURBINES.

If interested, write Dept. "E" for Bulletin

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Branch Offices: 176 Federal St. BOSTON; CHICAGO 76 Monroe St.; 405 Power Bldg. MONTREAL

HYDRAULIC TURBINES
THE PELTON WATER WHEEL CO.
Hydraulic Engineers
1992 Harrison Street, San Francisco; 100 Broadway, New York

A. D. COOK, LAWRENCEBURG, INDIANA
Manufacturer of
Steam and Power Deep Well Pumps, Single and Double Acting, Cook's Patent Brass Tube Well Strainers, Deep Well Cylinders, Sucker Rods and Well Tools, Deep Well Pumping Systems installed complete.
Write for Catalog No. 11-S
Cook Deep Well Products have always been manufactured by A. D. Cook. The Cook Well Company of St. Louis, Mo., a selling organization, has retired from active business and has transferred its good will to A. D. Cook. Customers of the Cook Well Company will receive direct service by writing to A. D. Cook, Lawrenceburg, Ind.

WOODWARD WATERWHEEL GOVERNORS
Built in All Types and Sizes from the Smallest to the Largest
Woodward Governor Company
Rockford, Illinois

PULSOMETER STEAM PUMP
See large ads in 1st and 3rd issues, also Searchlight Advertisements
225 West 42nd Street, New York City, N. Y.

One of four 72-inch Drainage Pumps furnished the City of Memphis, Tenn.

FROM THE LARGEST TO THE SMALLEST

Allis-Chalmers Centrifugal Pumps are built for the largest special installations and in the smaller standard sizes with the same careful consideration of all details, consequently they can be depended upon to meet your requirements for practically any kind of pumping work.

Our sixty-page bulletin describing Allis-Chalmers single and multistage pumps and including other valuable information ought to be in the reference library of every user of centrifugal pumps. Your copy will be sent on request.

A 1½-inch motor driven type G8 pump.

ALLIS-CHALMERS

MILWAUKEE, WIS. U. S. A.

KEYSTONE

WELL DRILLS AND EXCAVATORS

DOWNIE

DEEP WELL AND CENTRIFUGAL PUMPS

Manufactured by

KEYSTONE DRILLER CO., Beaver Falls, Pa.
170 Broadway, New York.
Agent, Interstate Mach. Corp., Commerce Trust Bldg., Philadelphia

MORRIS since 1864

CENTRIFUGAL PUMPS

Since 1864 we have been building Centrifugal Pumps, Hydraulic Dredges and Steam Engines.

Morris Machine Works, Baldwinsville, N. Y.
Agents in Principal Cities.

Fig. 45

ERIE

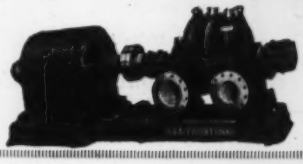
Sand-Gravel Dredging Pumps

will handle your liquids with solids in suspension at the minimum cost. Belt, motor or steam direct drive.

Send for Bulletin 35

ERIE PUMP & ENGINE WORKS
152 Glenwood Ave., Medina, N. Y.

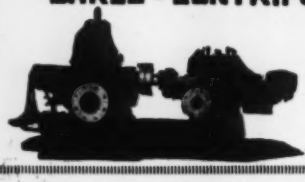
LECOURTENAY



CENTRIFUGAL PUMPS

LECOURTENAY CO.
3 MAINE STREET
NEWARK, NEW JERSEY

EARLE - CENTRIFUGAL - PUMPS



For all purposes where Centrifugal Pumps of the better class are adapted.

The Earle Gear & Mach. Co.
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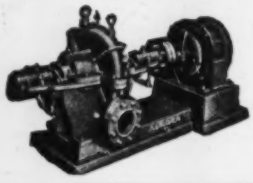
Philadelphia, Pa.

RoTURBo CENTRIFUGAL PUMPS

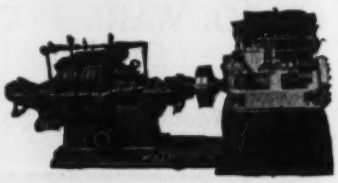
Manistee Iron Works Co., Manistee, Michigan



Pumps—AURORA—*Pumps*

Single and Two-Stage, open impeller pumps ¾ in. to 24 in. discharge openings. Double-suction pumps, 1½ in. to 72 in. Multi-stage pumps all capacities. Deep well turbines and Power Heads. Special Mine-Sinker Pumps.

AURORA PUMP & MFG. CO.,
Loucks St., Aurora, Ill.



Worthington Diesel Engines
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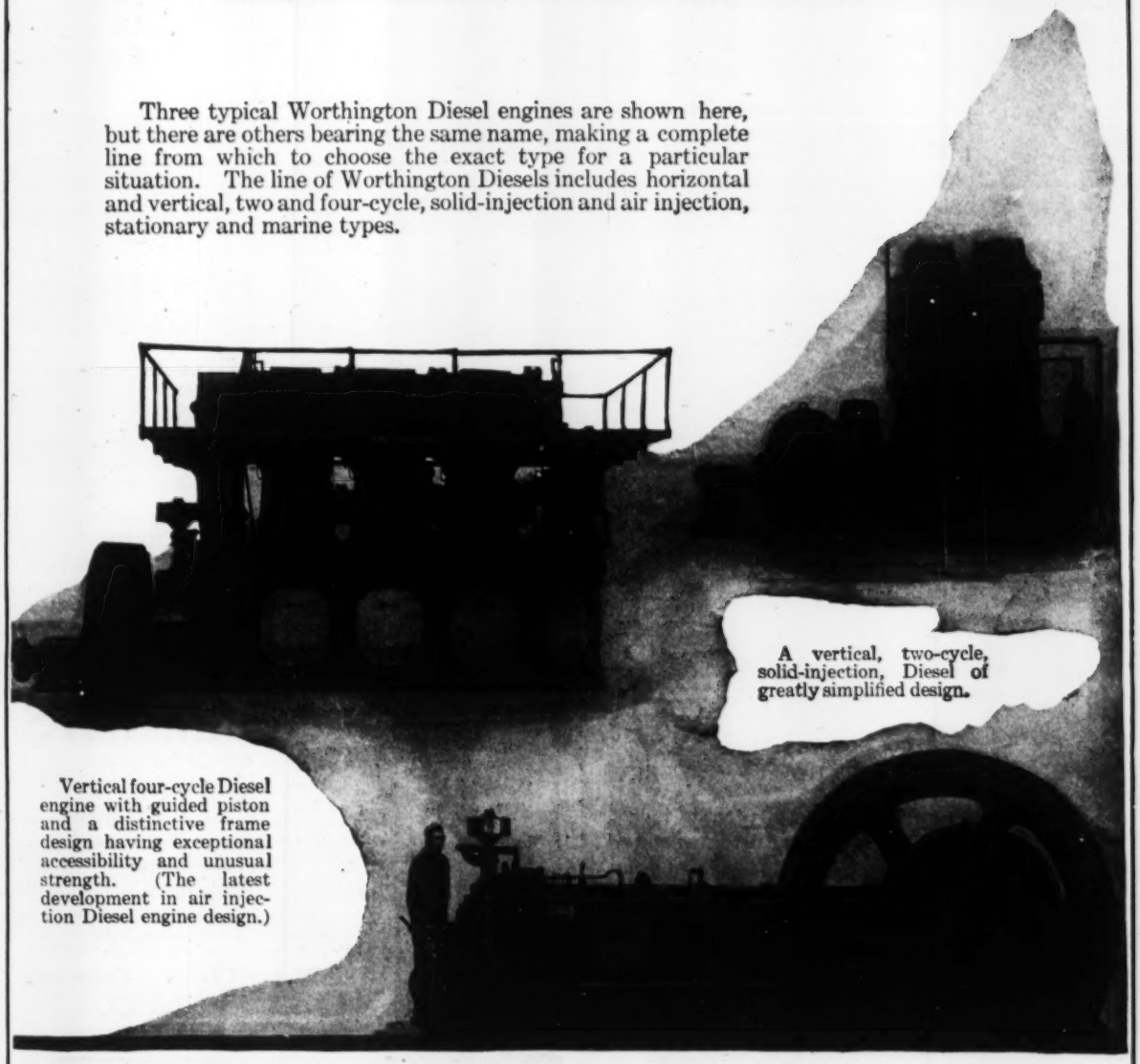
Three typical Worthington Diesel engines are shown here, but there are others bearing the same name, making a complete line from which to choose the exact type for a particular situation. The line of Worthington Diesels includes horizontal and vertical, two and four-cycle, solid-injection and air injection, stationary and marine types.



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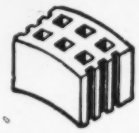

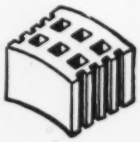

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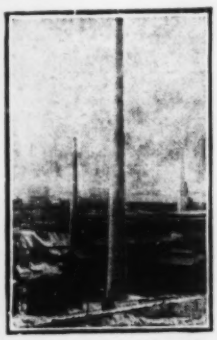

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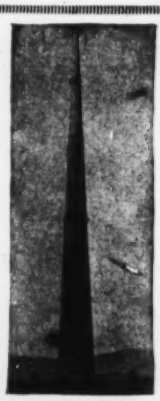

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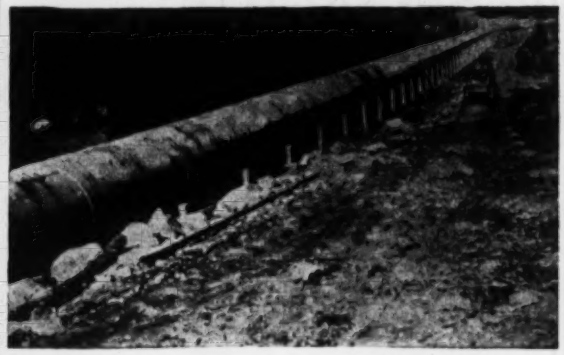

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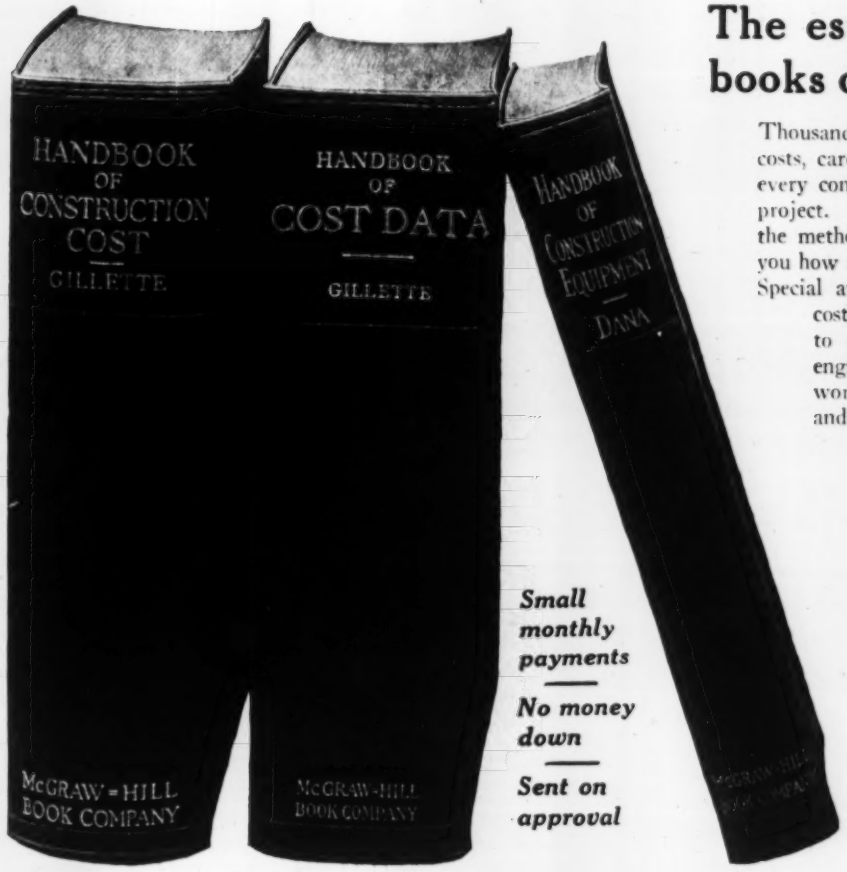

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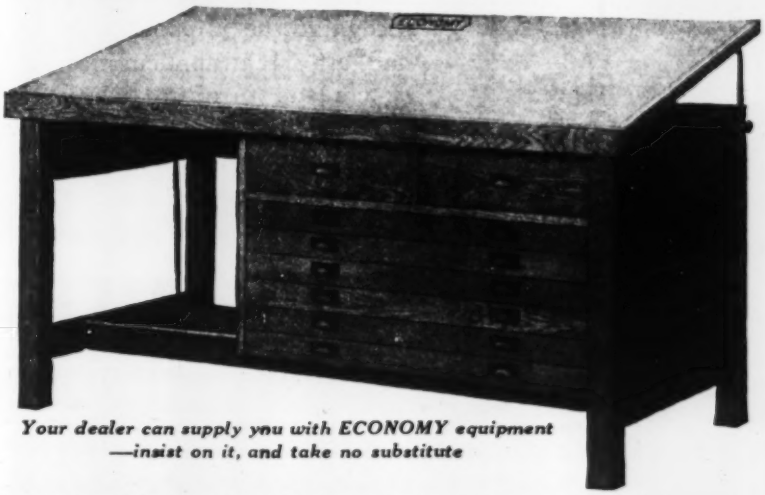

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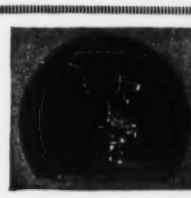

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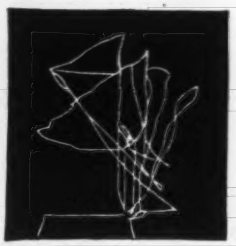

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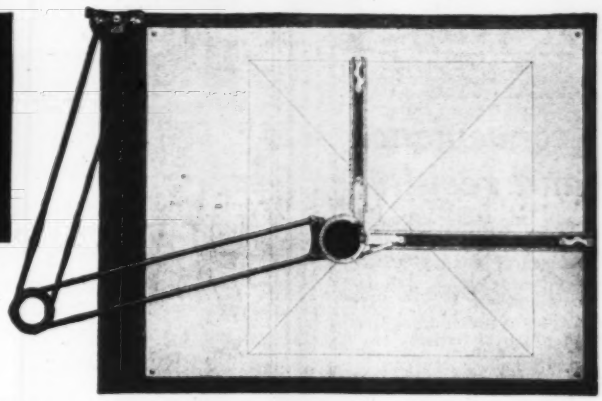

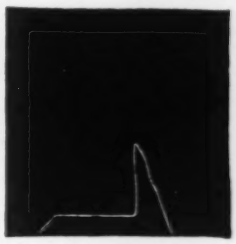

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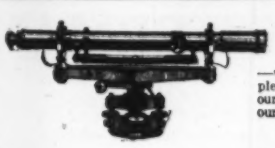

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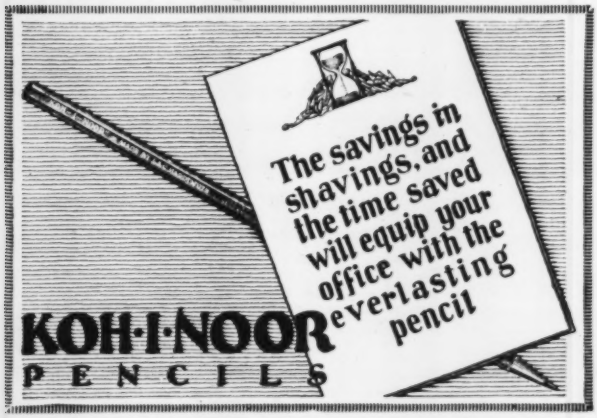

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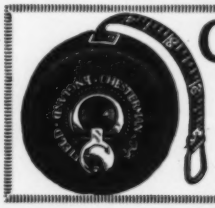

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WHAT AND WHERE TO BUY INDEX

A Classified Index of Advertisers in this Issue

Equipment, Apparatus and Supplies Used in the Civil Engineering and Contracting Fields with Names of Manufacturers and Distributors

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See Searchlight Section for used Equipment.

Adding Machines
Monroe Calcul. Mach. Co.

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Carey Co., The Philip

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See Searchlight Section

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(See Elevators, Bucket)

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Graver Corpn.

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Pennsylvania Cement Co.
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Vulcanite Port. Cement Co.

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Cement-Gun Co.

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Vulcan Iron Works of Pa.
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Rust Engineering Co.
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Wiederholdt Construction Co

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Custodis Chimney Construction Co., Alphons
Heine Chimney Co.
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Universal Crane Co.

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(See Road Oilers, Pressure)

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(See Excavators)

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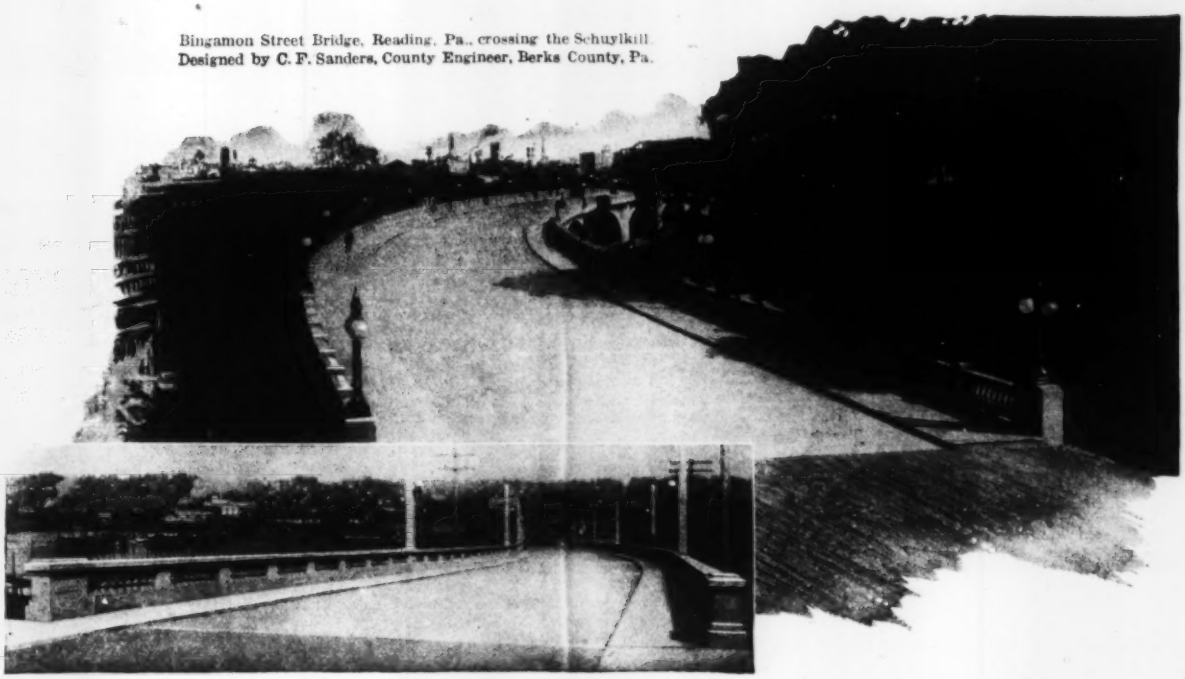

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12-23

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Hadfield-Penfield Steel Co.
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Granite Paving Block Mfrs.'

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Irving Iron Works
Mitchell-Tappen Co.
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Hammers, Steam Pile
(See Pile Hammers, Steam)

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National Hoisting Eng. Co.
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Ransome Con. Mchy. Co.
Stroudsburg Engine Works
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Vulcan Iron Works of Pa.

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Mundy Hoist. Eng. Co., J. S.
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Stroudsburg Engine Works
Thomas Elevator Co.

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Ingersoll-Rand Co.
Lidgerwood Mfg. Co.
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Mundy Hoist Eng. Co., J. S.
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Sullivan Machinery Co.

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Ransome Concrete Mchy. Co.

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Harris Brothers Co.
Heltzel Steel Form & Ir. Co.
Honhorst Co., The Jos.

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Economy Scaffold Co.

Hose, Air
Chicago Pneumatic Tool Co.

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Smith Mfg. Co., A. P.
Wood & Co., R. D.

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Inserts, Concrete
Concrete Steel Co.

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(See Directory of Engineers)

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Berger & Sons, C. L.
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Buff & Buff Mfg. Co.
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Lietz Co., A
Weber Co., The F.

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Hendrick Mfg. Co.
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Snead Architect. Iron Wks.
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McKiernan-Terry Drill Co.
Norton, Inc., A. O.
Roos Company, H. W.

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Barrett Company
Carey Co., The Philip

Joints, Filler Paving
Barrett Company
Standard Oil Co. of N. Y.

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Central Foundry Co.
Crane Company, The
U. S. Cast Ir. Pipe & Fdy. Co.

Kilns, Rotary
Vulcan Iron Works of Pa.

Lath, Expanded Metal
Armco Culvert & Flume Mfrs. Assn.
Berger Mfg. Co.
Mitchell-Tappen Co.
Northwest'n Exp. Metal Co.

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Leadite Co., Inc., The

Lead Pencils
Koh-I-Noor Pencil Co.

Lights, Contractors'
Carbic Manufacturing Co.

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(See Wagon Loaders)

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Baldwin Locomotive Co.
Jeffrey Mfg. Co.

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Davenport Locomotive Wks.
Vulcan Iron Works of Pa.

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Ironton Engine Co.
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(See Mixers, Hot)

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Cement-Gun Co.
Lakewood Engineering Co.
Ransome Concrete Mchy Co.

Mixers, Grout
Austin Machinery Corp.
Ransome Concrete Mchy Co.
Union Iron Works

Mixers, Hot
Austin Machinery Corp.

Mixers, Mortar
Austin Machinery Corp.
Ransome Concrete Mchy Co.

Mixers, Paving
Austin Machinery Corp
Ransome Concrete Mchy. Co.

Mixers, Pneumatic
Ransome Concrete Mchy. Co.

Mortar
Carney Co., The

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Allis-Chalmers Mfg. Co.
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Jenkins Bros.

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Detroit Graphite Co.
Truscon Laboratories

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Detroit Graphite Co.
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Paints, Metal Protective
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Carey Co., The Philip
Detroit Graphite Co.
National Lead Co.
Protexol Corp.
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Paving, Asphalt
Carey Co., Philip
Standard Oil Co. of N. Y.

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(See Creosoted Block Timber, Poles, Cross-Arms, Lumber)

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Granite Paving Block Mfrs.

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Ingersoll-Rand Co.

Paving, Cold Patching
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Godwin Co., Inc., W. S.

Penstocks
Blaw-Knox Co.

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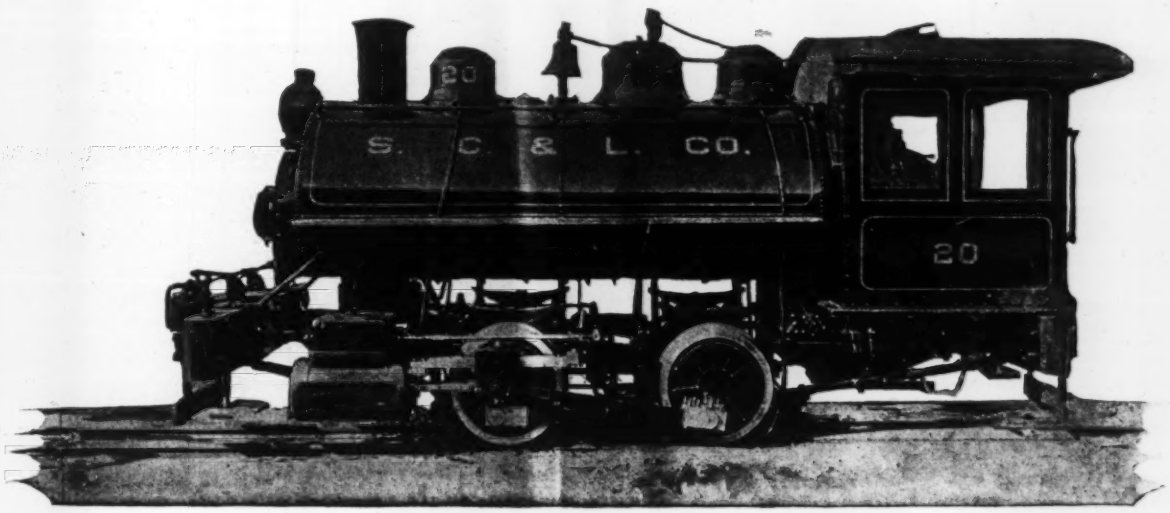

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The Vulcan shown in the photo is the 12x16-in. cylinder, standard gauge, four-coupled saddle tank type, weighing 25 tons.

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Established 1849

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Pawling & Harnischfeger Co.
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(See Hoists, Conc. Tower)

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Blaw-Knox Co.

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Smith Mfg. Co., A. P.

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Golden-Anderson Valve Specialty Co.
Ludlow Valve Mfg. Co.

Valves, Angle, Check, Gate and Globe
Chapman Valve Mfg. Co.
Coffin Valve Co.
Golden-Anderson Valve Specialty Co.
Jenkins Bros.
Ludlow Valve Mfg. Co.
National Valve & Mfg. Co.
Simplex Valve & Meter Co.
Westinghouse Tr. Brake Co.

Valves, Automatic
Golden-Anderson Valve Specialty Co.
Ludlow Valve Mfg. Co.
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Chapman Valve Mfg. Co.
Dean, Ltd., Payne

Valves, Control Hydraulic
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Valves, Float
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Valves, Regulating
Golden-Anderson Valve Specialty Co.
Ludlow Valve Mfg. Co.
Simplex Valve & Meter Co.

Valves, Return
Golden-Anderson Valve Specialty Co.

Valves, Safety
Golden-Anderson Valve Specialty Co.

Valves, Sewage
Chapman Valve Mfg. Co.

Valves, Sluice
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Eagle Wagon Works
Watson Truck Corp.

Wagons, Dump, Auto
Austin-Western Rd. Mch.Co.
Eagle Wagon Works

Wagons, Dump
Austin-Western Rd. Mch.Co.
Watson Truck Corp.

Wagon Loaders
Austin Machinery Corp.
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Brown Hoisting Mchy Co.
Dobbie Frdy. & Mach. Co.
Lidgerwood Mfg. Co.
Mead-Morrison Mfg. Co.
Mundy Hoisting Eng. Co J S

Window Sash Putty
Truscon Laboratories

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(See Rope, Wire)

Wire and Cable, Electrical
American Steel & Wire Co

Wood Casings
Michigan Pipe Co., The

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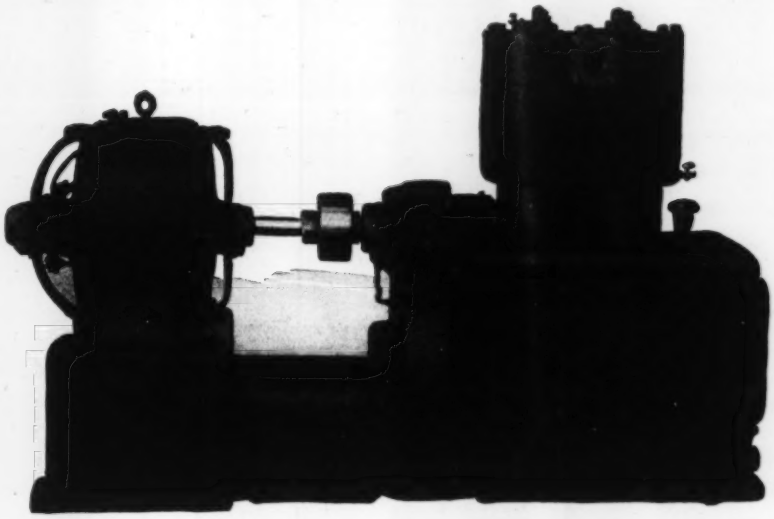
Barrett Company
Detroit Graphite Co.
Protexol Corp.
Truscon Laboratories



ALL TYPES AND SIZES

The Compressor shown here is the E-4 Type. It is a motor-driven unit with piston displacement of 110 cu. ft. per minute. This is but one of many Westinghouse-National types, which are built in all sizes from 11 to over 600 cu. ft. capacity. Write for the Westinghouse-National catalog.

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WESTINGHOUSE - NATIONAL Air Compressors meet every requirement of compressor service in a field represented by a size range of 11 to over 600 cubic-feet output of air per minute.

In addition to exceptionally high-grade construction, Westinghouse-National models are equipped with the famous HP Automatic Control, which effects an economy in the use of power and also eliminates needless wear and depreciation on the machine as a whole.

This special type of control is an exclusive feature, found only on Westinghouse-National Compressors.

Westinghouse Traction Brake Company
General Office and Works: Wilmerding, Pa.

WESTINGHOUSE—NATIONAL *Air Compressors*

"QUALITY MACHINES FOR QUALITY SERVICE"

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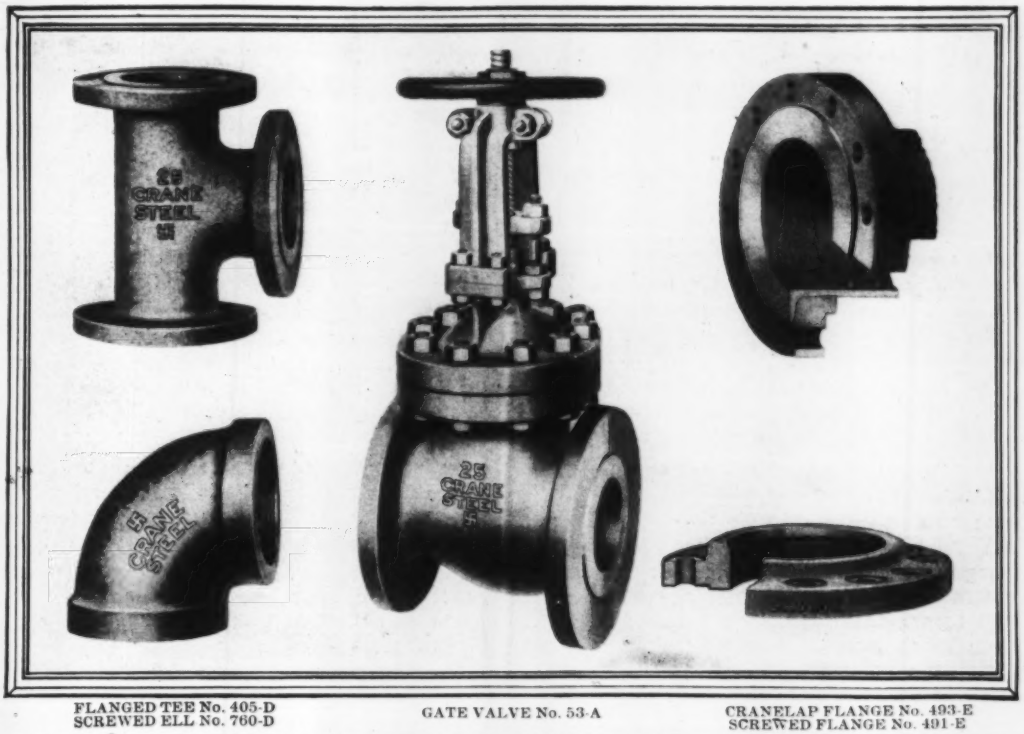

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CRANE "SERIES 25" CAST STEEL MATERIALS

For use in power plants where pressures run as high as 250 pounds and total steam temperatures may reach 750 degrees, Crane has developed a new specialized line of piping materials, designed by engineers of wide experience, known as "Series 25."

Valve bodies, bonnets and discs are cast steel; seat rings, disc rings and stems are monel metal. Fittings are Crane cast steel, accurately machined.

For descriptive literature and specifications of Crane's six new lines of steel valves and fittings, telephone or write the Crane representative at the Crane branch near you.

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Barrett ROOFINGS

Roofs That Don't Talk Back!

Fourteen Barrett Specification Roofs on the three great plants of the American Thread Company. Seven of these roofs have an area each of 23,000 feet or more. And every one of them is bonded against repair expense for a long term of years.

That's the sort of roofs that busy mill executives want on their buildings—roofs that can be laid and forgotten—roofs so free from trouble that you need never give them a thought. That's why the engineers of the construction companies who reared these buildings specified Barrett Specification Roofs.

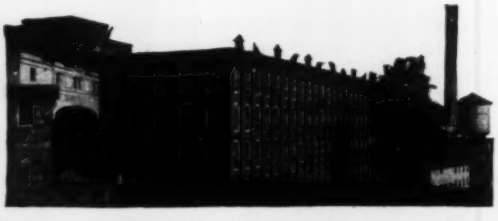
The Barrett Specification standardizes every detail of material, workmanship and inspection. Barrett inspectors follow the job to see that the Specification is absolutely followed. The man who lays the roof must have a recognized standing for good workmanship to secure the Surety Bond for the building's owner.

Because experience has proved that Barrett Specification Bonded Roofs far outlast the guaranteed period, we are able to bond them against all repair expense for 20 years.

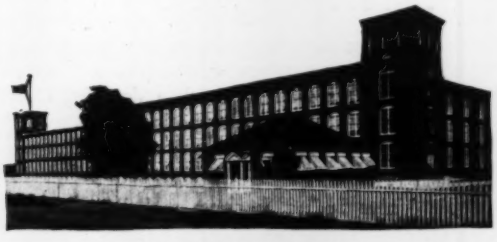
But whether your roof is constructed according to The Barrett Specification or whether it is a roof built to your own specification—

Whether it is on an old building or on a new one—

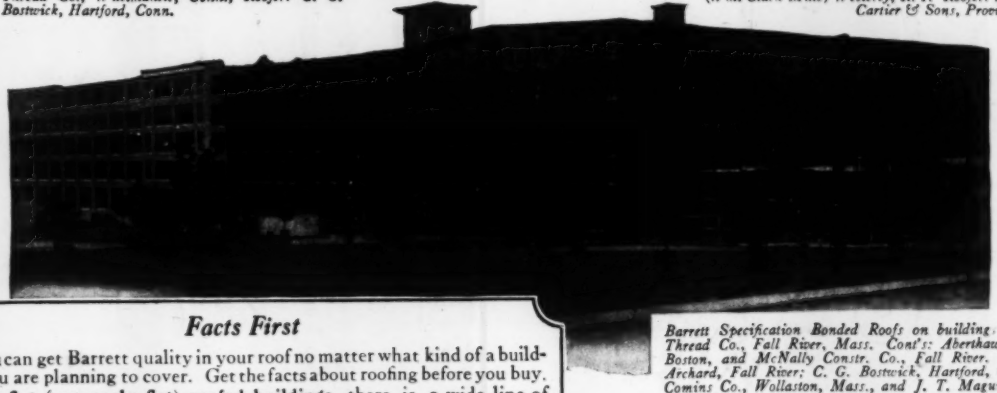
Experience has shown that it pays to see that the felt used and the pitch used are both labeled Barrett.



Barrett Specification Bonded Roof on American Thread Co., Willimantic, Conn., Roofer: C. G. Bostwick, Hartford, Conn.



Barrett Specification Bonded Roof on American Thread Co. (Wm. Clark Mills) Westerly, R. I. Roofer: M. N. Cartier & Sons, Providence.



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For flat (or nearly flat) roofed buildings, there is a wide line of Barrett Built-Up Roofs of which the Barrett Specification is the leader.

For all steep-roofed buildings, there are four types of shingles—durable, fire-resistant, surfaced with everlasting mineral in red, green or blue-black. In roll roofings, a wide variety—both plain surfaced or mineral surfaced.

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The Barrett Company

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